DEPARTMENT OF ENERGY

ACCOUNTABILITY REPORT

FISCAL YEAR 1999

February 2000

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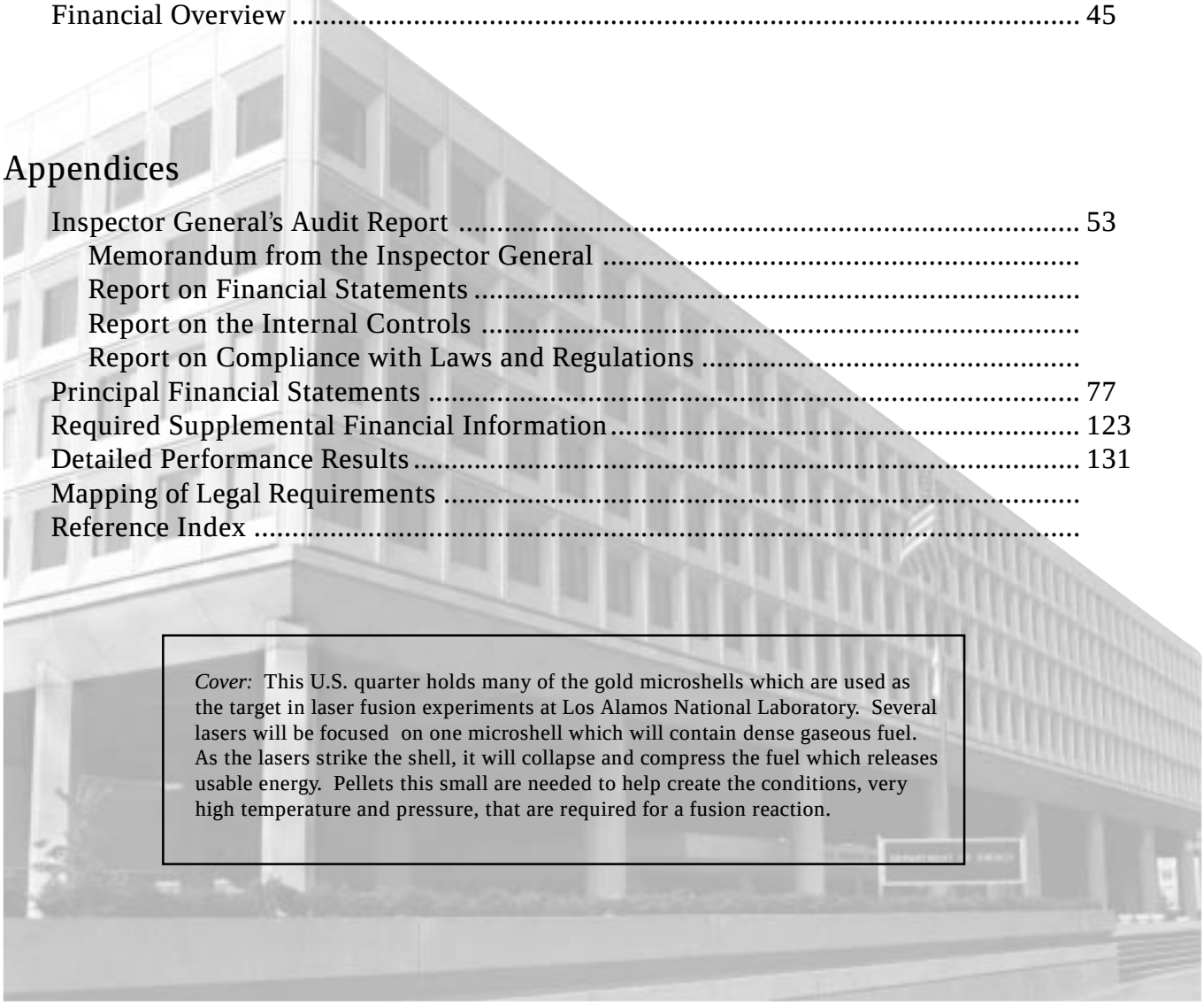

Cover: This U.S. quarter holds many of the gold microshells which are used as the target in laser fusion experiments at Los Alamos National Laboratory. Several lasers will be focused on one microshell which will contain dense gaseous fuel. As the lasers strike the shell, it will collapse and compress the fuel which releases usable energy. Pellets this small are needed to help create the conditions, very high temperature and pressure, that are required for a fusion reaction.

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Message From the Secretary

I am pleased to present the Department of Energy's Fiscal Year 1999 Accountability Report. The Report integrates information on our operational performance and financial activities. It is a progress report describing our achievements and the challenges we face. It demonstrates our strong commitment to stewardship and accountability in administering some of the Nation's most important programs on behalf of the American people.

The Department of Energy's responsibilities are important: protecting our national security; advancing the frontiers of science and technology; helping to solve the challenge of global climate change; cleaning up waste sites throughout the country; working to bring down the cost of electricity to the American people; and ensuring a balanced energy portfolio for our Nation. Our work spans a broad range of activities where we are making advances on a number of fronts. Our scientific research is unlocking the mysteries of the quark, the building block of matter. We are mapping the labyrinth that is the human genome, the building block of life. We have joined hands with Russia to ensure our joint national security, working so that nuclear materials stay out of the hands of terrorists. And, we are on the forefront of environmental remediation science, cleaning up the Nation's cold war legacy of nuclear waste and permanently isolating it from people and the environment.

My objective is that the Department administer its programs in the most efficient and economic manner possible. To accomplish this, we rely on our system of management controls. We believe these controls are working effectively. However, we have identified ten areas, such as security and project management, where improvements can and should be made. This report describes these areas as Departmental challenges and explains the actions we are taking to remedy them.

I am pleased to report that our Fiscal Year 1999 financial statements received an unqualified opinion from the auditors. Last year, in their audit of the Department's Fiscal Year 1998 statements, the Office of Inspector General identified needed improvements in our processes for estimating the liability associated with the cleanup of the nuclear weapons complex. Our efforts in 1999 to ensure the accuracy and completeness of the environmental remediation liability estimate in this year's statements were successful.

Meeting the needs of the American people is foremost for all of us at the Department of Energy. We have set ambitious goals and are prepared to meet the challenges of today and the future.

Bill Richardson

Detailed Performance Results

The Government Performance and Results Act of 1993 requires Federal agencies to report performance results annually. A summary of DOE's FY 1999 performance results is contained in the Overview section of this report. The following pages contain detailed information on the results achieved for all commitments contained in the Secretary's FY 1999 Performance Agreement with the President.

The commitments and supporting performance measures are arranged along the Department's business lines and strategic objectives. Each commitment and measure has an assessment of the Department's performance. The following terms are used to describe the Department's performance:

Exceeded Goal	The results were significantly more than planned.
Met Goal	The results met the target performance level or were slightly above the target.
Nearly Met Goal	The performance was less than the target level but not significantly less.
Below Expectations	The results were significantly less than the target.
Unspecified	End of year results were not available at the time of printing.

A "Plan of Action" is included for measures where performance was "Below Expectations." Some measure that indicate an assessment of "Nearly Met Goal" also have a "Plan of Action."

ENERGY RESOURCES

ER 1-1. Boosting the Nation's Production of Domestic Oil. Support research and development, policies, and improved regulatory practices capable of ending the decline in domestic oil production before 2005. **Assessment:** Met Goal

Success will be measured by:

- *Demonstrate four advanced production enhancement technologies that could ultimately add 190 million barrels of domestic reserves, including 30 million barrels during FY 1999.*

Results: Advanced technologies for improved reservoir management/pressure maintenance and advanced drilling and completion technologies are boosting productivity of mature oil reservoirs in New Mexico and California. Four technology demonstrations have achieved important production and reserve increases even though the full benefits will not be achieved for several years. Technology 1, targeted horizontal drilling offshore California, has almost doubled production. Technology 2, thermal consolidation of sand in the Wilmington, California field, is saving $90,000 to $150,000 per well. Technology 3, advanced reservoir management methods for slope and basin clastic reservoirs, will raise production from 10 percent to 45 percent of oil in place. Technology 4, advanced reservoir characterization for waterflood management, has produced over 50,000 barrels from five well recompletions, and the entire project is expected to produce almost 6 million barrels of additional oil. These projects provided 40 million barrels of incremental oil reserves during FY 1999. **Assessment:** Exceeded Goal

- *Complete an online environmental compliance expert system, developed in cooperation with States, that will improve oil and gas production economics by giving producers online access to Federal and State rules and regulations and allow them to conduct environmental permitting and reporting over the Internet, reducing time and costs related to environmental compliance.*

Results: The online environmental compliance expert system has been completed and a website server is available on the National Petroleum Technology Office web page. The prototype Federal regulatory website has been updated with regulatory information and given a new format that serves as a foundation for the expert system to answer producers' questions on compliance with Federal environmental laws. For State systems, completed a model for State oil and gas regulatory websites with the Interstate Oil and Gas Compact Commission and the State of Indiana. Indiana will help other States implement similar websites. **Assessment:** Nearly Met Goal

ER 1-2. Maintaining an Effective Strategic Petroleum Reserve. Maintain an effective Strategic Petroleum Reserve (SPR) to deter and respond to oil supply disruptions, and act cooperatively with the importing member nations of the International Energy Agency. **Assessment**: Met Goal

Success will be measured by:

- *Initiate additional SPR Infrastructure Life Extension Program projects, thereby bringing program implementation to approximately 96 percent of the $328 million program. Program completion in FY 2000 will increase sustained drawdown capability to 4.1 million barrels per day, compared to 3.7 in FY 1997.*

Results: Initiated additional SPR Infrastructure Life Extension projects as planned for FY 1999. Implementation of the additional projects through September 1999 brings the cumulative Life Extension Program initiation total to 96 percent of the $328 million program baseline. **Assessment:** Met Goal

ER 1-3. Diversifying the International Supply of Oil and Gas. Diversify the international supply of oil and gas. **Assessment**: Met Goal

Success will be measured by:

- *Continue DOE leadership in international energy initiatives that are instrumental in developing, through government-to-government efforts, an effective legal and regulatory framework for private-sector energy investment and policies to encourage development of a broad portfolio of fuel supplies.*

Results: U.S.-Russia Joint Commission: Under the auspices of the Energy Policy Committee, DOE works on a government-to-government basis to seek legislation and regulations fostering increased investment opportunities in the oil sector through the development of implementing regulations to production sharing agreement (PSA) legislation. In FY 1999, Russia passed amendments to its PSA legislation improving the opportunities for western investment. Russia also passed enabling legislation, conforming several existing laws with the PSA legislation. DOE is now working with Russia to encourage adoption of normative acts (implementing regulations) for the PSA legislation. DOE is working with industry and Russian governmental entities to ensure that the proposed Law on Trunk Pipeline Transportation provides the appropriate climate for foreign investment. In the coal sector, DOE will be assisting in drafting business plans to upgrade Russian coal mines. DOE continues to urge that the Federal Energy Commission remain an independent agency since there are measures being developed in Russia to merge it with another ministry. U.S.-Ukraine Bi-National Commission: DOE chairs the Energy Working Group, whose goal is to work on a government-to-government basis urging the Government of Ukraine to develop laws and an environment conducive to western investment. In FY 2000, the Deputy Secretary will participate in a meeting of the U.S.-Ukraine Bi-National Commission to take place in the United States in December. DOE chairs an interagency effort focused on Black Sea energy development and environmental protection. DOE sponsored a workshop in Odessa on regional oil spill response planning and will hold a series of workshops to develop legislation for oil spill response planning. Saudi Arabia: DOE signed an energy technology cooperative memorandum of understanding with the

Kingdom of Saudi Arabia in FY 1999. This agreement will lead to increased technical cooperation between the United States and Saudi Arabia. In FY 2000, a Saudi Team will visit the United States to assess technologies and discuss continued cooperation. The United States also is working on a government-to-government with the Kingdom of Saudi Arabia to change the environment for western investment in the Kingdom. Egypt, Israel, and Palestinian National Authority (PNA): In FY 2000, it is expected that technical cooperation agreements will be signed with the Egyptians and Israelis on solar power and fuel cells, and with the PNA on general energy cooperation. In the Baltics, DOE is pursuing policies to encourage energy privatization and U.S. investment in energy projects. **Assessment:** Met Goal

ER 1-4. Developing Alternative Transportation Fuels and More Efficient Vehicles. Develop alternative transportation fuels and more efficient vehicles that can reduce year 2010 projected oil (crude plus refined products) imports of 12 million barrels per day by 10 percent. **Assessment**: Below Expectation

Success will be measured by:

- *Expand the Clean Cities program to create continuous corridors of alternative transportation fuel availability in and between 10 major urban centers.*

Results: An LNG (liquid natural gas) refueling infrastructure has been established for use by long-haul trucks in Los Angeles, San Francisco, and Las Vegas. This corridor includes 10 large metropolitan areas. **Assessment:** Met Goal

- *Support an industrial partner to complete site preparation and begin construction of industry-owned facility to demonstrate first-of-a-kind cellulosic biomass to ethanol technology from agricultural crop waste.*

Results: Final financing has been delayed until more equity money is attained. This is expected to happen in FY 2000. **Assessment:** Nearly Met Goal

- *Build a single-cylinder proof-of-concept diesel engine that delivers up to 55 percent efficiency.*

Results: A single-cylinder diesel proof-of-concept engine was verified by Caterpillar at 53 percent efficiency. **Assessment:** Nearly Met Goal

ER 1-5. Maximizing the Productivity of Federal Oil Fields. Maximize the productivity of Federal oil fields, consistent with Congressional legislation. **Assessment**: Met Goal

Success will be measured by:

- *With the sale of Elk Hills Naval Petroleum Reserve, work in this area is essentially complete.*

Results: No measure was set for FY 1999. **Assessment:** Not applicable.

ER 1-6. Taking Measures to Avoid Domestic Energy Disruptions. Take measures to avoid, but when needed, respond to domestic energy disruptions. **Assessment**: Met Goal

Success will be measured by:

- *Initiate the development and implementation of a national plan to protect the Nation's energy infrastructure as required by the Presidential Decision Directive 63.*

Results: Critical infrastructure protection was an unfunded mandate in FY 1999, yet with limited contributions within the Department, significant progress has been made. Regarding the first mission, the Department has developed and initiated a process for critical asset identification. Regarding the second mission, DOE has been working with the Nation's electric and gas utilities to assess and improve the security of the information and control systems that run their operations. So far, five electric power companies have undergone vulnerability assessments as part of this program. This program is now being expanded to cover gas and oil companies. Other accomplishments include: establishment of the Office of Critical Infrastructure Protection (OCIP) to coordinate and oversee the Department's PDD-63 responsibilities; partnerships established with energy sector leaders and government technical experts for the purpose of creating an R&D program to support the national effort to assure the nation's critical energy infrastructure; creating an interdepartmental coordination group to develop a Department-wide CIP budget for FY 2001; working with industry to develop a business case for CIP; and establishment of a partnership with the National Infrastructure Protection Center at the FBI and the North American Electric Reliability Council to develop indications and warnings criteria—information on disruptions and threats. **Assessment:** Met Goal

- *Work with industry organizations and government agencies, including the National Petroleum Council, to assess the impact of changing market conditions and regulations on the level and variability of petroleum prices and supply, and provide recommendations to minimize disruptions during change.*

Results: The Department has worked with the National Petroleum Council to carry out a detailed study of Refinery Viability and Product Deliverability addressing the impact of changes in product specifications and market conditions on these issues. That study is nearing completion, with draft results before the Coordinating Subcommittee. The Department also did detailed analysis and filed public comments and recommendations on an EPA Tier II rulemaking proposal and is currently working with EPA to develop an acceptable final rule that does not threaten adequate supplies of reasonably priced gasoline. DOE staff are also working with EPA, at that agency's request on three other ongoing or potential fuel quality rulemakings. **Assessment:** Met Goal

- *Ensure that each power system control area operated by a Power Marketing Administration (PMA) receives, for each month of the fiscal year, a Control Compliance Rating of "Pass" using the North American Electric Reliability Council performance standard.*

Results: The PMAs have received a pass rating for each month for FY 1999. **Assessment:** Met Goal

- *Work with industry organizations and government agencies to establish a comprehensive process to assess Y2K readiness status, promote intersectoral coordination, and provide contingency plans. Provide for timely communication to the public of information regarding readiness status and contingency planning activities.*

Results: As of June 30, 1999, over 99 percent of all mission-critical facilities, systems, and components of U.S. bulk electric systems and 94 percent of electric distribution systems were ready to operate into the year 2000. Over 99 percent of the bulk electric suppliers had developed contingency plans approved by the North American Electric Reliability Council. **Assessment:** Met Goal

ER 2-1. Establishing a More Open, Competitive Electric System. Update the Administration's 1998 legislative proposal and support administrative actions to promote establishment of a more open, competitive, and reliable electric system, with improved environmental performance. **Assessment**: Exceeded Goal

Success will be measured by:

- *Enhance electricity sector modeling capabilities by benchmarking the representation of transmission system constraints against models of physical power flows to better address electric reliability and economic issues, and use this enhanced modeling capability in support of the legislative process.*

Results: Databases were constructed that contain the necessary information to make the power flow simulations required to assess the current transmission representation in the Policy Office Electricity Modeling System. Preliminary simulations for the Eastern Interconnection have been made. **Assessment:** Met Goal

- *Issue a revised Administration proposal on electric utility restructuring and the supporting economic analysis to provide a catalyst for consensus and action.*

Results: A new proposal was released in April 1999. It has been introduced in the House and Senate. A supporting economic analysis was released in May 1999 and was introduced into the Congressional Record at the request of the Secretary. **Assessment:** Met Goal

ER 2-2. Boosting the Nation's Production of Natural Gas. Support R&D policies and improved regulatory practices that can increase domestic natural gas supplies, moderate future price increases, and fuel 25 percent of the anticipated 6 trillion cubic feet (TCF) increase in natural gas demand (of which 3.5 TCF is for electricity generation) through 2010. **Assessment**: Met Goal

Success will be measured by:

- *Complete development of one Advanced Drilling, Completion and Stimulation technology system that could contribute an additional 6 TCF of domestic gas reserves by 2010.*

Results: The DOE-sponsored High Power Slim-hole Motor and Hybrid Bit Drilling System was successfully demonstrated to have higher performance than conventional slim-hole drilling systems at the GRI Catoosa, Oklahoma, test facility in December 1998. This demonstration successfully met the planned goal by marking the completion of development and demonstration of the new technology to industry. The high power motor was shown in laboratory dynamometer testing to have twice the power of conventional slim-hole motors; however, the Catoosa test ran the DOE high power drilling system in comparison to a conventional slim-hole system in the same drilling environment with the following results: (1) the high power slim-hole drilling system drilled at twice the rate of the conventional system; (2) improved bit performance in both soft and hard formations was achieved with the hybrid bit through the combined use of polycrystalline diamond compact cutters and thermally stable polycrystalline diamond cutters; and (3) the high power system was also shown to provide a more positive and reliable restart after stalling, thus improving the operational efficiency over drilling with conventional systems. **Assessment:** Met Goal

ER 2-3. Developing Renewable Domestic Energy. Develop renewable energy technologies and support policies capable of doubling non-hydroelectric renewable energy generating capacity by 2010. **Assessment**: Met Goal

Success will be measured by:

- *Support the Million Solar Roofs Initiative by installing 15,000 energy systems.*

Results: More than 20,000 solar energy systems were installed in FY 1999, more than 50,000 since the program's inception. During FY 1999, 27 new partnerships were formed, bringing the total to 41. **Assessment:** Exceeded Goal

- *Develop codes, standards, and safety specifications for residential photovoltaic (PV) roof systems.*

Results: Due to additional time needed to resolve issues raised by the P929 (PV interconnection) ballot committee members, the full committee vote was delayed until FY 2000. However, two significant actions have been accomplished in this reporting period. The committee recommended practice was approved by the IEEE SCC21 chairman. Also, the IEEE Standards Board approved the project: Standards for Distributed Power Resources Interconnection with Electric Power Systems. The project is now an official standards development project. **Assessment:** Nearly Met Goal

- *Accumulate 750 hours of reliable operation for a distributed concentrating solar power system.*

Results: Almost 3,000 hours of unattended operations have been accumulated for the Boeing/Stirling

Engine Systems concentrating solar power dish/ engine system. **Assessment:** Exceeded Goal

- *Complete design of power plant modifications for co-firing of biomass with coal.*

Results: Construction at GPU Seward Station (Johnstown, PA) and the NIPSCO Bailly Station (Merriville, IN) has been completed for the long-term demonstration testing. **Assessment:** Met Goal

- *Develop an industry-led vision and roadmap for an integrated bioenergy industry to advance the development of biomass derived energy and its use in domestic and global markets.*

Results: The third bioenergy visioning meeting was held in Washington on June 3, 1999, with key leaders from private industry representing the fuels, power, and chemical industries. A revised draft was created based on the feedback that was received at the June meeting and it is currently being circulated for final review from the industry reviewer group. A Vision Review and Adoption Meeting is scheduled for December 1, 1999, with the same industry group. At this meeting, DOE intends to solicit final comments from the group, and hopes this group will adopt development of the roadmaps in the first quarter of FY 2000. **Assessment:** Nearly Met Goal

- *Establish a U.S.-based commercial firm as an internationally recognized certification agent using testing and design review services provided by the National Wind Technology Center.*

Results: Underwriters Laboratory has contacted all U.S. wind turbine manufacturers to announce their availability for international certification of wind turbines using testing facilities at the National Wind Technology Center. **Assessment:** Met Goal

- *Complete three nationwide solar technology Super-Energy Savings Performance Contracts (Super ESPCs) for use by all agencies.*

Results: Completed one solar technology Super-Energy Savings Performance Contract for photovoltaics. Two of the solar technology Super ESPCs will not be developed as planned. One, solar thermal, has been dropped due to a lack of agency demand for a new contract. The other, solar pre-heat, has been dropped due to a cancellation of the solicitation. **Assessment:** Below Expectation

Plan of Action: The Department's Federal Energy Management Program is currently re-evaluating the most appropriate mechanisms to increase deployment of renewable technologies in Federal facilities.

ER 2-4. Reducing Emissions from Existing Fossil Fueled Power Plants and Developing Clean, High Efficiency Fossil Fueled Power Plants for the 21st Century. By 2010, significantly reduce emissions from existing fossil fuel power plants and from new plants by (1) developing market-ready coal power systems with efficiencies over 60 percent (new plants are currently about 35 percent), emissions to less than one-tenth of New Source Performance Standards (NSPS), and CO2 emissions 45 percent below conventional plants; and (2) integrating advanced turbine and fuel cell technology to achieve market-ready gas-fueled power plants with efficiencies over 70 percent. **Assessment**: Met Goal

Success will be measured by:

- *Complete testing of the first commercial-sized fuel cell module (100 KWe) using high temperature solid oxide technology suitable for advanced high-efficiency electrical generation cycles.*

Results: The 100-kWe unit has operated successfully for grater than 6,000 hours. The unit is continuing to operate well at the demonstration site in the Netherlands. **Assessment:** Met Goal

- *Complete full-scale component testing of two advanced, utility-scale turbines with over 60 percent efficiency when used in combined cycles (new plants are currently about 55 percent) and with ultra-low NOx emissions. Initiate advanced gas turbine full speed, no load testing with one gas turbine manufacturer.*

Results: General Electric conducted the full-speed no-load test of the GE 7H ATS machine in December 1999. Due to the acquisition of Westinghouse by Siemens, the Siemens Westinghouse ATS Program schedule has slipped. Continuation application is due to DOE on November 19, 1999. To date, Siemens-Westinghouse has tested about 50 percent of the ATS turbine components. **Assessment:** Nearly Met Goal

- *Complete commercial demonstration of one integrated gasification combined cycle project (Wabash) and continue operations of two other gasification projects in order to establish the engineering foundation leading to a new generation of 60 percent efficient, ultraclean coal power plants.*

Results: The Wabash River IGCC project is on schedule to complete the commercial demonstration on January 1, 2000. The Tampa Electric IGCC project is on schedule and will continue operations throughout FY 2000. The Piñon Pine IGCC project is expected to continue the operational phase throughout FY 2000. Project definition activities are on schedule with the Kentucky Pioneer Energy Project and will continue throughout FY 2000 to completion in January 2001. **Assessment:** Nearly Met Goal

Plan of Action: The Wabash River IGCC project has submitted a request for a 2-year extension of operations through 2002, and to make project modifications for improved performance and economics. DOE is currently evaluating the Wabash request and will make a decision in early FY 2000.

- *Complete review of proposals for the second round in FY 1999, and initiate projects to design and develop advanced catalysts, electrodes, and membranes, as well as advanced separator plates and high temperature sealants under the Russian-American Fuel Cell Consortium.*

Results: Proposals have been submitted for funding of projects under the Russian-American Fuel Cell Consortium (RAFCO), and eight projects have now been funded. In addition, the DOE Under Secretary has asked that a technology roadmap be developed for fuel cell commercialization in Russia in order to evaluate funds for RAFCO under the new Nuclear Cities Initiative. Work on that roadmap is still underway. **Assessment:** Met Goal

ER 2-7. Improving Existing Nuclear Power Plants. Improve nuclear power plant reliability and availability to increase the capacity factor of existing nuclear power plants from the 1996 average of 76 percent to 85 percent by 2010. **Assessment**: Met Goal

Success will be measured by:

- *Complete Memorandums of Understanding with the Nuclear Regulatory Commission and the Electric Power Research Institute (EPRI) to guide future implementation of the Joint DOE-EPRI Strategic Research and Development Plan to Optimize U.S. Nuclear Power Plants.*

Results: The Office of Nuclear Energy, Science and Technology (NE) and the Nuclear Regulatory Commission (NRC) signed the Cooperative Nuclear Safety Research Memorandum of Understanding (MOU) on August 16, 1999. NE and the Electric Power Research Institute (EPRI) signed the Cooperation in Light Water Reactor Research MOU on September 23, 1999. The MOU with NRC provides the guiding principles under which cooperative research on commercial nuclear power will be planned and conducted by NRC's Office of Nuclear Regulatory Research and DOE's Office of Nuclear Energy, Science and Technology. This MOU benefits both agencies by conserving resources, avoiding duplication, and sharing information and costs. The MOU with EPRI establishes the guiding principles under which cooperative commercial nuclear energy research programs between EPRI and DOE's Office of Nuclear Energy, Science and Technology will be planned and conducted. The primary focus of this MOU will be on the research and development objectives and tasks included in the "Joint DOE-EPRI Strategic R&D Plan for Optimizing Current Nuclear Power Plants." This focus relates to DOE's FY 2000 proposed "Nuclear Energy Plant Optimization" program. **Assessment:** Met Goal

ER 2-8. Maintaining Nuclear Power as a Viable Option for the Future. Maintain a viable nuclear option for future, carbon-free baseload electricity through cooperative technical development activities with U.S. electric industry, national laboratories, and universities that would maintain domestic nuclear capabilities and that would facilitate a U.S. order of an advanced nuclear power plant by 2010. **Assessment**: Met Goal

Success will be measured by:

- *Establish a peer-reviewed Nuclear Energy Research Initiative, initially funded at $19 million, to select and conduct investigator-initiated innovative scientific and engineering research that will address the issues facing the future of nuclear power in the U.S., including proliferation concerns, economics and the management of nuclear waste.*

Results: Following the peer review of the 308 proposals submitted, a total of 46 awards were made involving 45 U.S. and 11 foreign research organizations. The final Nuclear Energy Research Initiative (NERI) grant was awarded September 8, 1999. The U.S. organizations include 20 universities, 8 national laboratories, 16 industrial organizations and 1 government R&D agency, and 32 of the awards involve collaborations of multiple organizations. The NERI program conducts scientific and engineering research that will enhance the performance, efficiency, reliability, proliferation resistance, and economics of nuclear power. **Assessment:** Met Goal

ER 2-9. Developing Advanced Turbines for Cogeneration. Develop and introduce advanced turbines for cogeneration that can reduce annual industrial energy costs by $500 million and carbon emissions by nearly 1.7 million metric tons in 2010. **Assessment**: Met Goal

Success will be measured by:

- *Initiate the 8,000 hour test of the gas turbine engine for the Advanced Turbine System for use in industrial cogeneration.*

Results: The engine is on the test stand to be shipped shortly. Initiation of test is likely to begin in February 1999. **Assessment:** Met Goal

ER 3-1. Designing and Delivering the Vehicles of the Future. Develop and deploy vehicles, fuels, and systems of the future, contributing significantly to the Partnership for a New Generation of Vehicles to develop, by 2004, prototype mid-sized cars capable of 80 miles per gallon that will reduce NOx and CO2 emissions by two-thirds compared to today's new car average without compromising safety, comfort, and cost. **Assessment**: Met Goal

Success will be measured by:

- *By September 1999, in cooperation with industry and other Federal agencies, develop a direct injection power system technical roadmap and a fuel cell power system technical roadmap to integrate fuels and lubricants research and development with development of engine and emissions treatment technologies.*

Results: Draft roadmaps have been completed and are available as of November 1999. **Assessment:** Met Goal

ER 3-2. Improving Efficiency of Energy Intensive Industries. By 2010, reduce industrial energy use per unit of output by 25 percent by supporting industry/government/academia partnerships in R&D to improve efficiency of the Nation's energy intensive industries. **Assessment**: Met Goal

Success will be measured by:

- *Complete roadmaps for six of the major energy intensive industries to achieve each industry vision and start implementing the resulting R&D to achieve up to 25 percent reduction of energy consumption by 2010.*

Results: Forest Products: Agenda 2020: The Path Forward—An Implementation Plan with the American Forest & Paper Association was released in March 1999. Chemicals: the Roadmap on Computational Chemistry, Materials of Construction Roadmap, and Computational Fluid Dynamics Roadmap have been completed. Separations 1999 (part 1) has been completed, and part 2 will be completed in 2000. Agriculture: The Technology Roadmap for Plant/Crop-based Renewable Resources 2020 was published in February 1999. Mining: Mining Cross-Cutting Technologies Roadmap (March 1999) and additional roadmaps are in planning. Glass: a revised Glass MOU was signed in February 1999. Aluminum: The Inert Anode Roadmap was published in February 1999 and Office of Industrial Technologies working with Office of Transportation Technologies, the Industries of the Future program has sponsored an Aluminum Industry Roadmap for Automotive Market which was released in June 1999. Steel: A revised Steel MOU was signed in February 1999. In addition, in the area of combined heat and power a report: Combined Heat and Power (CHP): A Vision for the Future of CHP in the U.S. in 1/2020 was released in September 1999. **Assessment:** Met Goal

- *Continue support for Industrial Assessment Centers operating at 30 participating universities that will conduct approximately 750 combined energy, waste, and productivity assessments.*

Results: The Industrial Assessment Center program remains on track at 30 universities. One university had dropped out, but another has replaced it. **Assessment:** Met Goal

ER 3-3. Improving the Energy Efficiency of Buildings. By 2010, improve the energy efficiency of the existing U.S. building stock, and increase the energy efficiency of new homes by 50 percent and other new buildings by 30 percent, compared to 1996 average new buildings. **Assessment**: Met Goal

Success will be measured by:

- *Develop progress milestones and estimates of energy-related program benefits annually for every Energy Efficiency/Renewable Energy program. Review 25 percent of the milestones and estimated benefits through external peer review each year with a goal of having all milestones and estimated benefits peer-reviewed at least once every four years.*

Results: Performance measures were developed and included in the FY 2000 budget request. An external review of selected program measures of programs was completed in March 1999 by Arthur D. Little. This review covered more than 25 percent of EE milestones and estimated benefits. **Assessment:** Met Goal

- *Accumulate customer economic savings from past and current Energy Efficiency/Renewable Energy programs exceeding $11 billion.*

Results: Estimated annual energy cost savings from Energy Efficiency and Renewable Energy programs exceeded goal by more than $10 billion.

Assessment: Exceeded Goal

- *Maintain an industry cost-share level over 40 percent when averaged across all work with industry.*

Results: Estimated industry cost-share is above 40 percent. **Assessment:** Met Goal

- *Weatherize 67,845 homes, bringing the total number of homes weatherized to 4.7 million.*

Results: Weatherized approximately 68,000 homes in FY 1999, bringing the total number of houses weatherized to 4.7 million. **Assessment:** Exceeded Goal

- *Work with the Federal Trade Commission to allow manufacturers to add the Energy Star logo to the yellow and black "Energy Guide" label for covered products and recruit an additional 1,500 stores to market Energy Star appliances nationwide.*

Results: With the partners recruited this year, we now have a total of 4,000 stores to market Energy Star appliances and assisted in the Federal Trade Commission proposed rule to allow manufacturers to add the Energy Star logo to the FTC Energy Guide label. **Assessment:** Exceeded Goal

- *Recruit 55 additional Rebuild America partnerships. New partners will begin action plans that will result in over 250 million square feet of floor space renovated, reduce annual energy costs by over $90 million, and reduce annual carbon emissions by 0.22 million metric tons.*

Results: We recruited 50 additional Rebuild America partnerships. The new partners are beginning action plans that will result in over 300 million square feet of floor space renovated. **Assessment:** Met Goal

- *Complete 100 homes that are over 50 percent more efficient than typical homes through the Building America program, bringing the total number of homes completed to 700; add five new community-scale projects for building 1,000 additional homes in FY 2000; and transfer research recommendations to the Partnership for Advancing Technology in Housing (PATH).*

Results: We completed approximately 400 homes that are over 50 percent more efficient than typical homes through the Building America program, bringing the total number of homes completed to 1,000. In addition, we have added five new community-scale projects, which are expected to result in more than 1,000 additional homes being built in FY 2000. **Assessment:** Exceeded Goal

ER 4-1. Planning for Energy-Related Greenhouse Gas Reductions. Develop policies, programs, and information to facilitate energy sector reductions

in greenhouse gas emissions. **Assessment**: Unspecified

Success will be measured by:

- *Develop a DOE proposal for guidelines for implementing the flexibility mechanisms included in the Kyoto Protocol.*

Results: DOE worked with EPA and the Department of State to develop proposed guidelines on CDM baselines, Kyoto Mechanism registries, and monitoring and reporting of inventories and CDM/JI project favorable decisions on sinks at COP5. Funding cutbacks prevented DOE/PO from developing its own guidelines proposals. Instead, DOE staff worked with other agencies to develop guidelines. **Assessment:** Nearly Met Goal

Plan of Action: Work on this Performance Measure will continue and accelerate during FY 2000.

- *Support, through quantitative analysis and international contacts, Administration efforts to obtain meaningful commitments for reducing greenhouse gas emissions from developing countries.*

Results: Argentina announced a specific target for greenhouse gas emissions at the UN Conference of Parties on Climate Change in November, 1999. China, Mexico, and South Korea are developing energy models to determine the potential for reductions in greenhouse gas emissions. Brazil has initiated analysis to identify potential Clean Development Mechanism projects whereby they would receive tradable credits for reductions. **Assessment:** Unspecified

- *Lead the U.S. Government technology and climate change strategy development and implementation through: (1) chairing and expanding the Annex II countries' Climate Technology Initiative, which promotes the objectives of the UN Framework Convention on Climate Change by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices for all activities and greenhouse gases, and (2) leading and facilitating the development of U.S. positions on technology issues in the climate negotiations including participation in the UNFCCC technology consultation process.*

Results: During the past year, U.S. Department of Energy staff continued to Chair and expand the Climate Technology Initiative (CTI), which promotes the objectives of the UN Framework Convention on Climate Change by fostering international cooperation for the more rapid development and diffusion of climate-friendly technologies and practices. Along with significantly expanding the number of developed countries actively participating and providing resources, the CTI conducted, under its working group on Capacity Building, two regional technology training courses: one for representatives of the Asian and Pacific region and one for Mexico, Central America, and the Caribbean region. These courses are designed to familiarize technically proficient individuals with contemporary climate-friendly technologies and practices relevant to their country/region so that, when they return home, they will be prepared to train others, thereby realizing a multiplier effect. Additionally, CTI conducted two extremely successful CTI/Industry Joint Seminars on Technology Diffusion: one in cooperation with the Southern African Development Community (SADC) in Zimbabwe and one for Eastern Europe in Slovakia. These seminars are designed to showcase situations where technology diffusion is being successful, as well as identify market barriers and market failures which have impeded the technology transfer contemplated under the Framework Convention. One of the outcomes of the seminar in Africa was the request by SADC for CTI to conduct a regional needs assessment of the energy sector under CTI's Cooperative Technology Implementation Plan (CTIP) program. Work on this bottom-up, collaborative assessment with SADC is proceeding, and preliminary CTIP efforts have been initiated with Thailand.

The Department continues to be the leading technical agency on issues related to technology transfer under the UNFCCC. During the year, the Department continued to provide input and support to the development and negotiation of U.S. positions on technology transfer and related topics, participating directly in the negotiations at COP5 in Bonn, Germany, in October and November. The Department continues to work very closely with the UNFCCC Secretariat in its work related to technology transfer under the Framework Convention, including assisting the Secretariat with its preparation for the Workshop on the Consultative Process for the African region held in Tanzania in August, 1999. **Assessment:** Met Goal

ER 4-2. Cooperating Internationally to Develop Open Energy Markets. Cooperate with foreign governments and international institutions to develop open energy markets, and facilitate the adoption and export of clean, safe, and efficient energy technologies and energy services. **Assessment**: Met Goal

Success will be measured by:

- *Increase U.S. energy-related business internationally by removing policy, legal, and fiscal barriers for U.S. companies. In FY 1999, the Department will: Implement with other African Petroleum Exporting Countries (APEC) economies and the private sector an initiative to promote accelerated investment in natural gas infrastructure and trading networks in the APEC region; Implement the "U.S.-China Energy and Environment Cooperation Initiative," including coordination of interagency effort involving DOE programs, EPA, Commerce, and OSTP to promote rural electrification, urban air quality, clean energy sources, and energy efficiency; Lead a regulatory reform initiative to promote economic growth through private investment in environmentally sound energy development and regional integration in Sub-Saharan Africa, including South Africa; and Lead a regulatory reform initiative under the Binational Commission to pro-*

mote adoption by the Russian Government of transparent, fair, and consistent regulations in the oil and gas and power sectors in order to attract investment.

Results: APEC: Obtained APEC Energy Ministers' (21 members) approval of major US -led initiative to identify policy reform principles to reduce investor risk in natural gas. Implementation and follow-up included US hosted government-business workshop in April 1999 to identify priority principles and other actions to accelerate implementation. Actions underway include establishing "implementing teams" that will be invited to advise countries on how to implement principles. Initiative was developed in close cooperation with business. Implementation includes participation in a new Business Network (with two U.S. members), an advisory group to the APEC Energy Working Group, at all stages, including implementing teams. As part of the focus on how to implement agreed policy initiatives, such as the Natural Gas Initiative, a system of advisory teams is being tested on how to implement specific principles in the Initiative's Forum on Environment and Development. In cooperation with the Office of the Vice President, the Office of Science and Technology Policy, and the Commerce Department, DOE has hosted a number of bilateral meetings with the PRC to identify and promote energy cooperative activities under the Forum. Most recently, on April 9, 1999, DOE hosted a meeting of the Energy Policy Working Group under the Vice President's U.S.-China Forum on Environment and Development. Specific activities include: establishment of a U.S.-China Oil and Gas Industry Forum which met in July 1998 and met again in November 1999; a wide range of cooperative programs in energy efficiency and renewable energy; and cooperation in global climate change and clean coal technology.

Binational Commission: Russia—DOE organized several workshops to share information on the development and implementation of transparent and consistent oil and gas pipeline regulations with the Russian Federal Energy Commission. The workshops resulted in the drafting of oil and gas regulations by the Russian Federal Energy Commission that will help attract investment. African Initiative—Secretary Richardson launched an Energy Initiative for Africa on April 1, 1999. Following up on President Clinton's commitment to expand energy cooperation with Africa, the Initiative aims to facilitate economic growth by fostering trade and investment and encouraging regional market development, which has the best chance of attracting private sector interest. The Initiative involves close private industry participation, other U.S. agencies, and multilateral institutions. Cooperative activities include promoting clean energy technologies, such as natural gas and renewable energy, and capacity building through training and workshops for energy and business personnel. A cornerstone of the Initiative will be the U.S.-Africa Energy Ministers Conference to be held in Tucson, Arizona, on December 13-15, 1999, on energy and transportation infrastructure issues, which will include the Department of Transportation. Bilaterally, DOE participates actively in the Binational Commission with South Africa (established in 1995) and through several other mechanisms with Angola, Ghana, Nigeria, and Senegal. **Assessment:** Met Goal

ER 5-1. Expanding Public Access to Energy Information. Develop and expand public access to energy data, forecasts, analyses, and educational materials. **Assessment**: Met Goal

Success will be measured by:

- *Achieve a growth rate of at least 20 percent per year in the average number of unique monthly users of the Energy Resources Board Web Site (from about 71,000 per month in 1997).*

Results: The average unique monthly users of the Energy Resources Board Web Site numbered 348,528. This represents an increase in excess of 100 percent from the previous year. **Assessment:** Exceeded Goal

- *Publish domestic and international Annual Energy Outlooks forecasting energy supply and consumption through the year 2020.*

Results: EIA published the Domestic Annual Energy Outlook (AEO) in December 1998. An International Energy Outlook was published in March 1999. **Assessment:** Met Goal

ER 5-2. Developing Innovative Options for 21st Century Energy Markets. Carry out research and scenario analysis to help identify and understand options that could revolutionize 21st century energy markets. **Assessment**: Met Goal

Success will be measured by:

- *Complete scale-up of the Sorbent Enhanced Reformer concept for hydrogen production.*

Results: Demonstrated that extruded adsorbent could be promoted at the larger scale using spray impregnation methods. Carried out carbon dioxide/nitrogen breakthrough experiments at 450 degrees C with column of adsorbent and stability of adsorbent under repeated cycles. Demonstrated that the presence of steam does not affect the adsorbent's ability to remove carbon dioxide or its capacity. **Assessment:** Met Goal

- *Complete preliminary version of gas hydrate seismic model based on field and laboratory data.*

Results: Modeling the quantitative relationships between seismic response and hydrate volumes will lead to accurate estimates of these vast U.S. methane resources and provide information necessary to target production tests and global carbon cycle studies of methane hydrates. Preliminary seismic models have been completed based on the data from the Mackenzie Delta well (seismic, well logs, and cores). **Assessment:** Met Goal

- *Initiate a coordinated, Department-wide program to develop lower-cost, environmentally acceptable technology approaches to carbon capture and sequestration.*

Results: Two major items have been completed in this research area: a draft report titled "Working Paper on Carbon Sequestration Science and Technology" and the selection of six concepts to identify promising carbon sequestration options. The draft report, which was completed in March, was jointly developed by the Offices of Science and Fossil Energy. It details the emerging science and technology of carbon sequestration (the capture and secure storage of carbon dioxide emitted from the combustion of fossil fuels). The report identifies key research needs in several aspects of carbon sequestration, including technologies for separating and capturing carbon dioxide from energy systems, and sequestering it in geological formations or the oceans or possibly enhancing the natural carbon cycle. The six concepts selected for further development propose different ways to sequester carbon dioxide. Preliminary feasibility studies for 12 projects resulting from an earlier solicitation were completed in March. Each of the six projects will be extended for 22 months, permitting larger scale experimentation and more extensive technical and economic assessments. **Assessment:** Met Goal

NATIONAL SECURITY

NS 1-1. Maintaining the Enduring Stockpile. Extend the life of U.S. nuclear weapons by continuing the Stockpile Life Extension Program and Stockpile Maintenance activities. Improve detection and prediction capabilities for assessing nuclear weapon component performance and the effects of aging, and continually evaluate the safety, reliability, and performance of the nuclear weapons stockpile. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile.*

Results: The Department has met its goal. The establishment of an annual process for the review and certification of the safety and reliability of the nuclear weapons stockpile was directed by President Clinton and is crucial to the Nation's pursuit of the Comprehensive Test Ban Treaty. The Secretaries of Defense and Energy must inform the President each year whether the nuclear stockpile has any safety or reliability concerns that require underground testing. In reaching their conclusion, they are advised by the Directors of DOE's national weapons laboratories, the Commander of the U.S. Strategic Command, and the joint Nuclear Weapons Council. The third annual certification was completed in December 1998. Sandia National Laboratories, Los Alamos National Laboratory, and Lawrence Livermore National Laboratory published technical reports for the fourth annual certification in July 1999, completing the portion of the fourth annual certification cycle which is unique to DOE. The joint Nuclear Weapons Council report is now in draft form and is expected to be issued before the end of 1999. **Assessment:** Met Goal

- *Meet all annual weapons alteration and modification schedules developed jointly by DOE and DOD.*

Results: The Department nearly met this performance goal. While weapons in the stockpile are safe, weapon alterations and modifications are crucial to upgrade the stockpile to meet higher safety margins, replace faulty components, meet changed military requirements, or extend the life of the weapon. In FY 1999, there was no requirement for modification, but 11 weapon alterations were ongoing, either through research and development activities or refurbishment. The alterations were for the B61 (five), B83 (two), W76 (one), W78 (one), and W87 (two). DOE met the annual schedule for nine weapon alterations. **Assessment:** Nearly Met Goal

Plan Of Action: For alterations 342 (W87) and 752 (B83), recovery schedules have been developed with DOD, and DOE is meeting the new revised schedule.

NS 1-4. Developing a Replacement Source of Tritium. Provide a reliable source of tritium as required for the nuclear weapons stockpile by FY 2005 or FY 2007 depending on the production option selected. **Assessment:** Met Goal

Success will be measured by:

- *Continue development of the dual-path options and select, by December 1998, a primary tritium production technology.*

Results: The Department met its goal by selecting a primary tritium production technology in December 1998. In order to function as designed, all U.S. nuclear weapons require the use of tritium, which has not been produced by the United States since 1988. Because tritium, a radioactive isotope of hydrogen, decays at a rate of 5.5 percent per year, it must be replenished periodically. The current inventory of tritium is dwindling and will be sufficient to meet requirements only until about 2005, after which the 5-year tritium reserve would be impacted. Thus, it is necessary that a new domestic source of tritium be established by then. In December 1998, the Secretary announced his preference for producing tritium in commercial reactors. In May 1999, the Department issued a consolidated Record of Decision announcing that tritium will be produced in the Watts Bar and Sequoyah reactors operated by the Tennessee Valley Authority (TVA). The Record of Decision also stated DOE's intention to construct a new Tritium Extraction Facility at the Savannah River Site and to complete design of the Accelerator for Production of Tritium (APT) as the backup tritium technology. At the end of FY 1999, DOE and TVA had reached an agreement in principle for irradiation services, but TVA has delayed its formal signing of the agreement until it can convene a full board of directors meeting after two new directors are confirmed by the Senate. This, in turn, will delay the initiation of the process to amend the operating licenses of TVA's reactors to permit tritium production. However, the delay is not expected to delay the start of tritium production in FY 2003. Thirty two tritium-producing rods have been irradiated in TVA's Watts Bar reactor for a full operating cycle. The rods have been taken to DOE's Argonne National Laboratory-West in Idaho, where they are undergoing various non-destructive post-irradiation examinations. The Nuclear Regulatory Commission's Safety Evaluation Report on the rods cited no significant safety hazards involving their use in commercial reactors. The Department has issued a request for proposals to manufacture production-scale quantities of the rods. Detailed design and site preparation for the Tritium Extraction Facility has begun. In June 1999, the APT Project was rebaselined to reflect its status as the backup tritium-production technology. Engineering development and demonstration of key components of the accelerator system continued as planned throughout FY 1999. Activities included integrated operation of the Low Energy Demonstration Accelerator (LEDA), development and testing of high-energy radiofrequency linear accelerator technology, target/blanket performance and material studies, and tritium separation facilities. The first continuous-wave beam through integrated front-end accelerator components was achieved on July 30. Since then, testing continued at gradually increased power levels in order to demonstrate 100 milliamp continuous-wave beam operation. Los Alamos scientists successfully accomplished this critical milestone on September 17. Development of design packages for each major facility subsystem and prototype design of key elements continued throughout FY 1999. Integration of safety requirements into the design process, facility and system design descriptions and safety documentation progressed. **Assessment:** Met Goal

NS 2-1. Replacing Underground Testing with Science. Develop the advanced simulation and modeling technologies necessary to confidently mitigate the loss of underground testing by FY 2004. **Assessment:** Exceeded Goal

Success will be measured by:

- *Demonstrate a 3-trillion operations per second computer system.*

Results: The Department has exceeded its goal of demonstrating a 3-trillion operations per second computer system. The Accelerated Strategic Computing Initiative (ASCI) is a time-critical, essential element of the Department's Stockpile Stewardship Program. ASCI will enable DOE to develop the advanced simulation and modeling technologies necessary to shift from the past stockpile management approach based on new weapon development and nuclear testing to a science-based approach based on maintenance of the existing stockpile through advanced simulation and fundamental experiments. Specifically, ASCI will create and provide to all stewardship activities the leading-edge weapon simulation capabilities that are essential for maintaining the safety, reliability, and performance of the nation's nuclear stockpile under the current nuclear test moratorium and to the challenge set forth by the Comprehensive Test Ban Treaty. The ASCI Blue-Pacific system at Lawrence Livermore National Laboratory is currently operating at 3.89 trillion operations per second, approximately 30 percent faster than our performance goal. In addition, the ASCI Red system at Sandia National Laboratories is operating at 3.15 trillion operations per second and the ASCI Blue-Mountain system at Los Alamos National Laboratory is operating at 3.07 trillion operations per second. These systems are being used by ASCI's code development teams and weapons designers to run weapons simulations that are larger and more complex than was possible on previous machines. These simulations include higher resolution, improved physics models, and more robust computational math. **Assessment:** Exceeded Goal

NS 2-2. Developing New Experimental Capabilities for Understanding Weapons Science. Develop new nuclear weapons physics experimental test capabilities. **Assessment:** Below Expectation

Success will be measured by:

- *Continue construction of the National Ignition Facility (NIF) according to its Project Execution Plan schedules.*

Results: The Department's performance in meeting this goal during FY 1999 was below expectations. The

project's progress measured against the baseline currently included in the Project Execution Plan has met expectations. There was excellent progress and cost control on conventional facilities construction, the optics vendor development program proceeded as planned and the underlying technical basis for the project remains sound. There has been rapid progress in design activities of the special laser equipment, though overall design remains behind schedule. In addition, a new laser deployment strategy was developed that better meets the needs of the Stockpile Stewardship Program and makes the facility more flexible and useful to other users as well.

However, in late August it was announced that delays in completing the design of laser and support equipment, coupled with additional costs for assembly of the laser infrastructure, are projected to significantly impact project cost and schedule. During the course of FY 1999, the project developed a new understanding of the stringent requirements for cleanliness and alignment of the laser system, which resulted in the need to redesign some aspects of the laser support equipment and to replan the deployment sequence of the laser system. The method of accomplishing the construction of the lasers in the building will require involvement of architectural/engineering firms and high-technology industry that was not previously planned. This is an out-year issue that was identified by the project staff working with the Department. **Assessment:** Below Expectation

Plan Of Action: The Secretary has issued a six-point plan to get the project back on track, and Defense Programs management has responded with an action plan. The Secretary has directed that aggressive inquiries be made by the Department, by outside experts, and by Lawrence Livermore National Laboratory, to determine why this problem arose and how best to proceed in a cost-effective and expeditious manner to complete the project as close to budget and schedule as possible. An integral part of the corrective action will be a review by the Secretary of Energy Advisory Board.

Although project managers are taking aggressive engineering and management steps to mitigate the cost and schedule issues associated with the laser system, the Department anticipated that resolving this issue will necessitate a baseline change at the Acquisition Executive level to accurately reflect future effort required for completing the project. Consistent with Conference Report language accompanying the FY 2000 Energy and Water Development Appropriations Act, a new project baseline will be completed in time for Secretarial approval and submittal to Congress not later than June 1, 2000.

NS 2-3. Conducting Experiments to Advance Our Understanding of Weapons Behavior. Advance our understanding of the fundamental characteristics of weapons behavior through systems engineering and advanced experiments and modeling to support future assessments of weapons safety, reliability, and performance. **Assessment:** Met Goal

Success will be measured by:

- *Conduct two or three subcritical experiments at the Nevada Test Site to provide valuable scientific information about the behavior of nuclear materials during the implosion phase of a nuclear weapon.*

Results: The Department has met its goal. Three subcritical experiments were conducted in FY 1999. On December 11, 1998, we conducted the first subcritical experiment of FY 1999, Cimarron, a Los Alamos National Laboratory (LANL) experiment. On February 9, 1999, Clarinet, a Lawrence Livermore National Laboratory (LLNL) subcritical experiment, was successfully executed. On September 30, 1999, we successfully executed Oboe 1, the first in a LLNL series of smaller subcritical experiments. The Cimarron experiment obtained data on the behavior of plutonium subjected to shock from high explosives. The Clarinet experiment obtained data on plutonium shocked with high explosives using both newly fabricated and aged samples. The Oboe series of experiments will also obtain data to improve our understanding of the complex behavior of metal surfaces under high explosive shock conditions. Data from subcritical experiments will be used to develop the science-based stewardship computer models. Additionally, the subcritical experiments make a significant contribution to maintaining nuclear test readiness, required by Safeguard C of the Comprehensive Test Ban Treaty and Presidential Decision Directive. **Assessment:** Met Goal

NS 3-1. Downsizing and Modernizing the National Security Enterprise. Provide an appropriately-sized, cost-effective, safe, secure, and environmentally sound national security enterprise. Ensure that sufficient scientific and technical personnel are available to meet DOE's long-term national security requirements. **Assessment:** Below Expectation

Success will be measured by:

- *Plan, coordinate, conduct, and participate in an Interagency National Security Technology Exchange (INTSE) conference.*

Results: The DOE Office of Nonproliferation and National Security hosted the FY 1999 INSTE in Germantown, MD, from May 25-27, 1999. Participants included the Department of Defense, Department of State, FBI, CIA, and National Security Council, as well as DOE R&D program representatives. Briefings focused on counterterrorism and security technologies. **Assessment:** Met Goal

- *Develop a comprehensive Weapons of Mass Destruction Defense Plan which addresses security planning, equipment, training, and exercise requirements.*

Results: The Department has received a significant number of comments on the draft revised protective force order from field offices and headquarters elements as well as other stakeholders. The major changes are being resolved through coordinated discussions with headquarters program offices. **Assessment:** Met Goal

- *Ensure that all facilities required for successful achievement of the Stockpile Stewardship Plan remain operational.*

Results: Two key activities are under way to provide operational production facilities for the successful implementation of the Stockpile Stewardship Plan: resumption of Enriched Uranium Operations (EUO) at the Y-12 Plant near Oak Ridge, Tennessee, and establishment of a Pit Production Program at the Los Alamos National Laboratory in New Mexico. At the Y-12 Plant, shipping/receiving, assembly/disassembly, depleted uranium operations, and evaluation of canned subassemblies were all restored by 1997. The first phase (Phase A) of the enriched uranium operations resumption process (resuming casting, rolling and forming, machining operations, partial material control, and accountability functions) was completed in December 1998. The second and final phase (Phase B) of EUO resumption restores chemical recovery processing and enriched uranium metal production capabilities. EUO Phase B resumption activities are significantly behind the FY 1999 schedule of September 1999 for enriched uranium metal production and June 2000 for chemical recovery processing. In the effort to reestablish the pit production capabilities at Los Alamos, the Chemistry and Metallurgy Research Upgrades project at LANL has been re-baselined, focusing resources on those upgrades necessary to ensure facility operability for the next ten years. The Department and LANL have begun pre-conceptual planning to replace the capabilities provided by this facility. The Transition Manufacturing and Safety Equipment (TMSE) project at LANL will provide urgent and near-term process equipment and infrastructure necessary for fabrication and certification of a War Reserve quality pit. To date, 11 of 30 TMSE sub-projects have been individually authorized and work initiated. Development of an overall baseline for this project is approximately four months behind schedule. The Capability Maintenance and Improvement Project (CHIP) will provide infrastructure improvements necessary to support a limited pit manufacturing capability at LANL. The project is currently planned as a new start in FY 2002. **Assessment:** Below Expectation

Plan Of Action: The significant delays in resumption of EUO Phase B capabilities were due to inadequate design and project controls for the hydrogen fluoride supply system line item project, and inadequately estimating the material condition and resources required to accomplish the restart efforts. The schedules to complete the remaining Phase B tasks are currently under review by a new contractor management team and DOE line management. A commitment to provide a new schedule and budget for the completion of Phase B resumption by December 31, 1999, was made in a briefing to the Deputy Secretary of Energy on November 12, 1999.

- *Meet the established schedules for downsizing and modernizing of our production facilities.*

Results: The Department did not quite meet its established schedules for downsizing and modernization our production facilities during FY 1999. Downsizing and modernization of our production facilities are planned under the Stockpile Management Restructuring Initiative (SMRI). This initiative includes the tritium facilities at the Savannah River Site near Aiken, South Carolina; uranium machining, recycling, and storage facilities at the Y-12 Plant; weapons assembly/disassembly and high explosive fabrication facilities at the Pantex Plant near Amarillo, Texas; and non-nuclear production facilities for electronic, electro-optical devices, plastic, and machined parts at the Kansas City Plant in Kansas City, Missouri. Construction funds for the downsizing at Savannah River and Y-12 were received in FY1998 and FY1999. Construction funds for the Kansas City and Pantex SMRI projects were received in FY1999; however, there was a Congressional requirement to have an Independent External Assessment report delivered to the Congressional Committees before obligating any of these funds. The reports were delivered to the Committees as required, but the obligation of funds was not authorized until May 28, 1999. This was eight months after the established schedule date for the authorization. The schedules for these two projects are being reestablished for performance measurement. The Savannah River SMRI project was 7 percent and the Y-12 SMRI project was 9 percent behind the established schedules. **Assessment:** Nearly Met Goal

- *Complete the shipment of plutonium pits from Rocky Flats to Pantex.*

Results: Shipments of surplus plutonium pits from the Rocky Flats Environmental Technology Site (RFETS) to the Pantex Plant were completed in April 1999. **Assessment:** Met Goal

- *Conduct oversight reviews to ensure that an effective Safeguards and Security program is maintained at all nuclear weapons facilities.*

Results: To date, the Office of Independent Oversight and Performance Assurance (OA) has conducted nine safeguards and security oversight reviews. **Assessment:** Met Goal

NS 3-3. Protecting Nuclear Materials, Information, and Facilities. Ensure and enhance protection of nuclear materials, sensitive information, and facilities. Provide DOE-related intelligence and threat assessment support to members of the national security community. **Assessment:** Unspecified

Success will be measured by:

- *Implement the DOE Counter-intelligence Action Plan pursuant to Presidential Decision Directive-61 to strengthen controls and protections of sensitive information, especially at the nuclear weapons laboratories.*

Results: In February 1998, the President issued Presidential Decision Directive 61 (PDD-61) designed to reorganize and improve the counterintelligence program of the U. S. Department of Energy. Subsequent to the release of PDD-61, the Office of Counter-

intelligence (OCI) developed a Counterintelligence Implementation Plan, which included 46 recommendations to achieve this goal. The 46 recommendations were segregated into three tiers to emphasize those which were most critical. As of September 30, 1999, 92 percent of the most critical (Tier I) recommendations had been implemented and 74 percent of the total 46 recommendations had been implemented. **Assessment:** Nearly Met Goal

- *Issue timely technical reports and threat assessments regarding potential domestic and/or foreign proliferant risks.*

Results:

Threat Assessment U.S. Department of Energy Pantex Plant—October 1998

Threat Assessment Lawrence Livermore National Laboratory—December 1998

Threat Assessment U.S. Department of Energy Nevada Test Site—February 1999

Planned Accomplishments:

Threat Assessment U.S. Department of Energy Hanford Site—May 1999

Threat Assessment Idaho National Engineering and Environmental Laboratory—July 1999

Threat Assessment Los Alamos National Laboratory—September1999

Threat Assessment Sandia National Laboratory - September 1999

Issuance and dissemination of a consolidated report, for the years 1997 and 1998, on the illicit trafficking in nuclear materials—September 1999

Issuance and dissemination of a special research report dealing with the security and vulnerability of certain nuclear material stockpiles in Former Soviet Union (FSU) countries and its (potential) impact on trafficking in materials of proliferation concern—September 1999.

These reports address the potential threat for a malevolent act directed at specific Department of Energy sites by adversaries. The Federal Bureau of Investigation (FBI) and the Bureau of Alcohol, Tobacco and Firearms (ATF) assist DOE in the development of these products, which provide a comprehensive assessment of external threats to DOE facilities. The Department is currently on track to meet or exceed the measures of success stated for this element. **Assessment:** Unspecified

- *Implement advanced technologies to prevent the theft or diversion of special nuclear materials, including the unattended, on-line gamma-ray monitor.*

Results: Technologies under development include: A portable measurement tool for gross nuclear material mass determinations; providing matrix correction techniques to allow accurate measurement of large crates to prevent smuggling of special nuclear materials; a low-wattage electrical calibration heater system to calibrate calorimetry instruments; transfer the neutron counting system technology to a commercial manufacturer; and provide a cost-effective technique for rapid nondestructive assay of plutonium in residues and impure materials. **Assessment:** Met Goal

- *Develop information on nuclear materials contained in waste in a new Departmental database for all nuclear materials by the end of the first quarter of FY 1999.*

Results: A plan to expand Nuclear Materials Management of Safeguards and Security (NMMSS) was developed by NN-44 and approved on April 9, 1998. The Department is currently scheduling workshops with field and headquarters to identify functional requirements for an upgraded NMMSS. The Department has supported the development and implementation of a standard site, item-level core nuclear materials accounting system for DOE facilities—the Local Area Network Materials Accounting System (LANMAS). Fourteen sites have committed to using LANMAS and are in various stages of installation / implementation. **Assessment:** Nearly Met Goal

Plan Of Action: A pilot program to test the feasibility of recording transfers of nuclear materials between waste sites in the current NMMSS system is ongoing at this time. NAC, Inc., the operating contractor for NMMSS, has provided a cost estimate for developing and maintaining a waste module in the current NMMSS system.

- *Further the protection of all U.S. origin nuclear materials in the United States and abroad from possible theft, loss, or illicit trafficking.*

Results: In addition to compensatory measures to ensure strict accounting and storage of all materials, enhanced measurement capabilities are being implemented to allow for measurement of materials not amenable to previous methods. **Assessment:** Met Goal

- *Develop advanced safeguards and security technologies for implementation in FY 2000.*

Results: Technologies developed by the Office of Safeguards and Security for implementation in FY 2000 include: An advanced operator training simulation tool for high-security dispatch application where the protection of critical national assets and national security are at stake; modernization of the Department's standardized access control system (ARGUS) to prevent unauthorized access to DOE facilities and assets; the Smart Camera project, which implements PC-based digital camera technology over an ATM network for the purpose of improving intrusion detection systems for primary alarm assessments; provide a capability for DOE sites to protect against flashrom hardware; and deliver the Access Delay Technology Transfer Manual to provide DOE sites with a reference guide for determining delay times for physical barriers and activated delay systems. **Assessment:** Met Goal

- *Initiate needed material protection, control, and accountability (MPC&A) upgrades at DOE facilities*

with weapons-usable material.

Results: Focus on MPC&A at several DOE facilities has been elevated, to include regularly scheduled measurements and inventories, as well as formation of a senior steering group to oversee the program. Where needed, compensatory measures have been instituted to retain materials in secure storage. **Assessment:** Met Goal

NS 3-5. Maintaining Readiness for Nuclear or Other Emergencies. Maintain nuclear test readiness and enhance emergency management capabilities to address any nuclear weapons, radiological, or other emergency in the United States or abroad. **Assessment:** Met Goal

Success will be measured by:

- *Maintain robust emergency response assets in accordance with Presidential Decision Directive 39, The Atomic Energy Act, Executive Order 12656, and Federal Emergency Plans.*

Results: The Department's Emergency Response Program exceeded its goal level for Fiscal Year 1999. This rating is based upon the successful deployments of the Department's radiological assets in support of U.S. Ambassadors abroad and Special Events. The Department's Emergency Response Program provides a national capability to respond to any radiological emergency or nuclear accident within the United States and abroad. The all-volunteer force that makes up the cadre of deployment forces is mostly from the nuclear weapons laboratories. The seven major capabilities/assets maintained are the Aerial Measuring System (AMS), the Accident Response Group (ARG), the Atmospheric Release Advisory Capability (ARAC), the Federal Radiological Monitoring and Assessment Center (FRMAC), the Radiological Assistance Program (RAP), the Nuclear Emergency Search Team (NEST), and the Radiation Emergency Assistance Center and Training Site (REAC/TS). These capabilities are maintained primarily through participation in international, national, state, and local operations, exercises, and training. Highlights of these activities for FY 1999 are as follows: During FY 1999, DOE radiological assets participated in 26 exercises and 24 real-world events. Also, REAC/TS responded to 59 (55 U.S. and 4 foreign) calls for medical assistance for 134 individuals and provided radiation accident management training to 177 health care professionals. In addition, REAC/TS and RAP personnel participated in Domestic Preparedness Training in 31 cities in support of Nunn, Lugar, Domenici legislation. The program trained 4,639 state and local first responders on nuclear/radiological awareness. Also, this program trained 1,048 state and local bomb technicians. Additionally, the program loaned 215 Radiation Pager "S" detectors to state and local bomb squads, enhancing their capability to detect potential nuclear/radiological incidents. This program positioned nuclear/radiological technical crisis response assets in the National Capital Area to respond to a terrorist Weapons of Mass Destruction incident during the NATO 50th Anniversary Summit. During FY 1999, REAC/TS participated in a joint project with Boston University in the first in a series of accident drills/exercises in Yerevan, Armenia. The drill/exercise was organized and sponsored by the International Atomic Energy Agency, with emphasis on medical management of radiation accidents involving five of the newly independent states of the former Soviet Union. During December 1998, a capabilities exercise (CAPEX) was conducted for the Nuclear Weapons Council, Congressional staff, and White House personnel. The objective of the CAPEX was to demonstrate the capability to simultaneously deploy and exercise DOE's complete array of emergency response assets. This included incident and accident assets such as NEST's Search Response Team, Joint Technical Operations Team, and the Nuclear/Radiological Advisory Team as well as ARG, AMS, ARAC, FRMAC, and RAP. This was the first time that all these assets were deployed and exercised at a single location, which tested capabilities to interact and be interoperable and the larger issue of command and control. All exercise objectives were successfully met. The Department of State (DOS) has developed a program to train and educate the American Embassies and Host Governments on the Crisis and Consequence Management for dealing with terrorist acts utilizing Nuclear, Radiological, Chemical, and Biological Weapons of Mass Destruction. In June 1999, the Emergency Response Program participated in a DOS-led interagency team to provide its first seminar/tabletop exercise to the U.S. Embassy in Jordan and Senior Level Host Government Officials. This program consists of a four-day tabletop exercise with the U.S. Embassy and Host Government. With respect to radiological incidents, the Department's emergency response program, during September 1999, deployed a special team to Phnom Penh, Cambodia, in support of the U.S. Embassy and the Government of Cambodia. The purpose of this deployment was to investigate a potentially serious situation in and around the Phnom Penh area. The team found no evidence of the concern raised by the Government of Cambodia. The Government of Cambodia expressed its appreciation through the U.S. Ambassador for the U.S. Government's quick response and superb cooperation. During August 1999, the Federal Bureau of Investigation (FBI) contacted the Office of Emergency Response regarding packages received by five Federal agencies in the Washington, D.C., area that purportedly contained radiological material. Arrangements were made with a team from DOE's office at Andrews Air Force Base to receive the packages from the FBI, survey the packages using a High Purity Germanium Detector, and store the packages under rules of evidence. The FBI requested DOE to store the packages until they were ready to retrieve them and fly them in an FBI plane to DOE's Savannah River Laboratory for a complete radiological analysis. In August of 1999, pursuant to direction from the Secretary, the responsibility for the management of these emergency response assets was transferred from the Office of Defense Programs to the Office of Security and Emergency Operations. **Assessment:** Exceeded Goal

- *Ensure that the capability to resume underground testing is maintained in accordance with the Presidential Decision Directive and Safeguard C of the Comprehensive Test Ban Treaty (CTBT).*

Results: The Department met its goal in maintaining it capability to resume underground nuclear testing. Maintaining the capability to resume nuclear testing requires DOE to maintain: (1) test facilities and equipment at the Nevada Test Site (NTS), (2) nuclear testing skills of personnel at both the NTS and the nuclear weapons laboratories, and (3) access to experienced personnel through knowledge capture and archiving. Experiments that require large quantities of high-explosives or experiments that require special nuclear materials driven by small amounts of high-explosives, the latter referred to as subcritical experiments, are conducted at the NTS. These experiments and specially designed test readiness exercises maintain NTS personnel test readiness skills, including containment, security, assembly, storage and transportation, insertion and emplacement, timing and control, arming and firing, diagnostics, and test control center activities. Three subcritical experiments, Cimarron, Clarinet, and Oboe 1, and 19 high-explosive experiments were conducted in FY 1999, as well as a Nuclear Explosive Safety Study exercise, which was performed with LANL. For the purpose of managing equipment and facilities essential to conducting an underground nuclear test, the DOE Nevada Operations Office has an ongoing archiving program which captures on videotape the knowledge and testing experience of departing personnel as well as data, photos, drawings, procedures, nuclear explosive safety studies, containment evaluation plans, lessons learned, and other information. In FY 1999, 7 video tape modules were completed; 3 new CD ROMs were created; and over 41,000 pages related to underground tests were scanned into the Document Management and Archived Records System. Additionally, many milestones toward implementing a computer aided management decision system (the Decision Support System, or DSS) were achieved: the Compliance Requirements database was linked to the DSS to identify requirements of UGT procedures, DOE orders, laws, certifications, permits, and qualifications; dynamic models for UGT functional areas covering Control Room Activities, Readiness Briefings, Arming and Firing, Area Control, Test Execution, and Treaty Verification were completed; and a reporting function, making it easier to perform cost-benefit analysis, was added. **Assessment:** Met Goal

- *Demonstrate improvement of a comprehensive management system to ensure effective Departmental response to all DOE emergencies.*

Results: Accomplishments through September 30, 1999: Conducted an emergency management technical assistance appraisal at Brookhaven National Laboratory (October 1998); Conducted an evaluation of the emergency management program at Hanford (March 1999); and evaluated the Hanford major emergency response exercise in June 1999. Major emergency response exercises were conducted at: Pantex Plant (March 1999); Hanford (June 1999); Nevada Test Site (June 1999); Los Alamos National Laboratory (July 1999); Rocky Flats Environmental Technology Site (May 1999); Lawrence Livermore National Laboratory (June 1999); Transportation Safeguards Division (April 1999); Mound (June 1999); Waste Isolation Pilot Plant (July 1999); Savannah River Site (August 1999); Sandia National Laboratory (September 1999); and radiological assistance to the State of Pennsylvania ("Vigilant Lion," September 1999). The Federal Radiological Monitoring and Assessment Center participated in an exercise at the Indian Point nuclear power plant (May 1999), and DOE radiological emergency response assets participated in a number of domestic consequence management related exercises throughout FY 1999. Conducted the following training courses: emergency decisionmaking for Ohio Field Office at Mound facility (December 1998); Integrating Emergency and Occurrence Reporting and an introduction to Emergency Action Level Development (November 1998 and May 1999); consequence assessment for Nevada Operations Office (December 1998); emergency decisionmaking for Y-12 Plant (April 1999); and exercise development for Pennsylvania Emergency Management Agency (April 1999). Conducted a technical meeting in conjunction with Soldier Biological and Chemical Command to discuss emergency planning aspects associated with response to chemical agents (October 1998). Conducted a DOE complex-wide information-sharing meeting on emergency management activities, including consequence assessment and protective actions (May 1999). Participated in numerous interagency emergency planning meetings associated with the Federal Response Plan, the Federal Radiological Emergency Preparedness Plan, and the National Contingency Plan. Participated in numerous intra- and inter-agency Y2K readiness activities, including a DOE Y2K Readiness Exercise (April 1999) and Y2K readiness drills by DOE sites (September 1999). Represented DOE at meetings of the Environmental Protection Agency's National Advisory Committee (NAC) for Acute Exposure Guideline Levels. Continued expansion of the Emergency Communications Network (data/video/voice) to Departmental elements and other Federal agencies. Participated in implementing the plan for addressing the Defense Nuclear Facilities Safety Board Recommendation 98-1, which improves the effectiveness to address and resolve environment, safety, and health issues identified by DOE internal oversight organizations. These accomplishments represent an important contribution to successful performance of this measure because of the wide spectrum of emergency management activities addressed. Virtually all elements of the Department benefit from theses accomplishments, which should result in overall comprehensive management system improvements to ensure effective Departmental response to all DOE emergencies. The Department has met the measures of success. The conduct of emergency response exercises at DOE sites and facilities actively demonstrates the state of response performance, and provides lessons learned to further improve emergency management across the complex. **Assessment:** Met Goal

NS 3-6. Managing Contractor Work Force Restructuring. Mitigate the impacts on workers and communities from contractor work force restructuring and assist community planning. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Support local community transition activities that will create or retain cumulatively 15,000 to 20,000 new private-sector jobs by the end of FY 1999.*

Results: Actual number of jobs created or retained was 22,186. **Assessment:** Exceeded Goal

- *Achieve annual recurring costs savings from separated workers that is at least three times the one-time cost of separation.*

Results: The ratio was about four times the one-time cost of separation. **Assessment:** Exceeded Goal

- *Keep involuntary separations between 30 and 60 percent of the positions eliminated while assuring maintenance of essential work force skills mix and productivity.*

Results: The percentage of involuntary separations was approximately 63 percent. The ability to offer enhanced voluntary separation packages was limited by Congressional budget reductions. **Assessment:** Nearly Met Goal

- *Implement initiatives to accelerate asset conversion and reuse that will result in more than $1 billion in long-term savings to the Department and facilitate economic diversification of local communities.*

Results: Identified property retention rate of 98 percent in 1997-1998. Attempting to establish HQ/Field coordination to designate properties for economic diversification of local communities. **Assessment:** Below Expectation

Plan of Action: This measure has been reviewed and determined to contain elements not within the jurisdiction of the Office of Worker and Community Transition. This measure has been eliminated from the FY 2000 performance measures and a different measure has been developed for asset management which will more accurately reflect program actions.

NS 4-1. Reducing the Weapons Stockpile. Dismantle nuclear warheads that have been removed from the U.S. nuclear weapons stockpile in a safe and secure manner. **Assessment:** Below Expectation

Success will be measured by:

- *Evaluate the impacts of warhead dismantlement and transparency initiatives.*

Results: In FY 1999, the Department funded three different studies to comprehensively evaluate the impacts of warhead dismantlement and transparency initiatives. The three studies were all completed on time and covered three different DOE facilities that could be potentially impacted by various warhead dismantlement and transparency initiatives. **Assessment:** Met Goal

- *Adhere to schedules for the safe and secure dismantlement of approximately 275 nuclear warheads that have been removed from the U.S. nuclear weapons stockpile.*

Results: In FY 1999, 207 nuclear warheads were dismantled, significantly less than the performance goal. Dismantlement of the W69 Short-Range Attack Missile warhead was completed in FY 1999. However, during FY 1999, dismantlement of the W79 Artillery-Fired Atomic Projectile warhead was at a rate lower than expected due to technical difficulties with the process and facility modifications, and dismantling of the W56 Minuteman II warhead was delayed by technical difficulties. No reliability figures or plans for military facilities have been affected. **Assessment:** Below Expectation

Plan Of Action: The backlog of retired warheads yet to be dismantled will be completed in FY 2005, not FY 2003 as previously planned.

NS 4-2. Reducing Inventories of Surplus Weapons-Usable Fissile Materials Worldwide in a Safe, Secure, Transparent, and Irreversible Manner. Implement the disposition of surplus highly enriched uranium (HEU) and plutonium and provide technical support to attain reciprocal actions for the disposition of surplus Russian plutonium. Minimize the future demand for HEU in civilian programs through the development of alternative low enriched uranium (LEU) fuels for research reactors and targets for medical isotope production. Support international efforts to place excess fissile materials under International Atomic Energy Agency (IAEA) safeguards. **Assessment:** Met Goal

Success will be measured by:

- *Complete the final Environmental Impact Statement and issue a Record of Decision on siting plutonium disposition facilities.*

Results: The draft Surplus Plutonium Disposition Environmental Impact Statement (EIS) was released for public review and comment in July 1998, and a supplement to the draft EIS, containing site-specific environmental analysis of the commercial reactor sites where mixed oxide (MOX) fuel will be irradiated, was issued in April 1999. The Department issued the final EIS on November 12, 1999, and expects to issue a Record of Decision in late December. **Assessment:** Nearly Met Goal

- *Initiate, by the end of FY 1999, negotiations with Russia on a bilateral agreement for the disposition of surplus weapons plutonium.*

Results: Formal negotiations with Russia on a bilateral agreement for the disposition of surplus weapons plutonium commenced in February 1999. Through the end of FY 1999, seven rounds of negotiations have taken place and the parties expect to complete the agreement in the near future. **Assessment:** Exceeded Goal

- *Initiate design for Pit Disassembly and Conversion and Mixed Oxide (MOX) Fuel Fabrication facilities.*

Results: In March 1999, the Department awarded a contract to Duke Engineering & Services, COGEMA, Inc., and Stone & Webster (DCS) to provide MOX fuel fabrication and irradiation services. DCS is currently conducting design work on the MOX fuel fabrication facility. In August 1999, the Department awarded a contract to Raytheon Engineers and Constructors for the design of a pit disassembly and conversion facility. **Assessment:** Met Goal

- *Continue transfer of U.S. surplus HEU to the United States Enrichment Corporation for dilution and subsequent sale.*

Results: In FY 1999, the Department transferred approximately seven metric tons of HEU from Portsmouth, Ohio, to the United States Enrichment Corporation. A total of 50 metric tons of surplus HEU will be transferred to USEC over the next six years. **Assessment:** Met Goal

- *Place over 20 metric tons of excess highly enriched uranium (HEU) under International Atomic Energy Agency (IAEA) safeguards in FY 1999.*

Results: The goal of placing over 20 metric tons of excess HEU under IAEA safeguards has been met. Thirteen metric tons of HEU were blended down to LEU at the Portsmouth Gaseous Diffusion Plant. The IAEA verified the HEU downblending operations. Seven metric tons of HEU were transferred to the BWXT facility in Lynchburg, Virginia, for downblending. The IAEA began the safeguarding of the HEU downblending operations at BWXT in November 1999. **Assessment:** Met Goal

- *Monitor the dilution of 30 metric tons of highly enriched uranium (HEU) to low enriched uranium (LEU) from dismantled Russian nuclear weapons for purchase by the United States Enrichment Corporation.*

Results: Monitoring was performed by staff making special monitoring visits (SMVs) and by the permanent presence office staff to comply with the 1993 U.S./Russia agreement. **Assessment:** Met Goal

- *Remove all highly enriched uranium oxides from the Portsmouth site.*

Results: All highly enriched uranium oxides have been removed from the Portsmouth Gaseous Diffusion Plant site. This activity was completed on June 23, 1999. A security sweep and downgrading of the X-345 building used for storing highly enriched uranium was completed by September 30, 1999, and the facility was downgraded from category I to category III, as reported in the September 30, 1999, draft DOE Annual Report on the Status of Environment, Safety, and Health Conditions at the Paducah and Portsmouth Gaseous Diffusion Plants for Fiscal Year 1999. This action will significantly reduce the safeguards and security operating costs to DOE at Portsmouth. **Assessment:** Met Goal

NS 5-1. Strengthening the Nuclear Nonproliferation Regime. Strengthen the nuclear nonproliferation regime through support of treaties and international agreements. **Assessment:** Met Goal

Success will be measured by:

- *Support U.S.-led negotiations on the Fissile Material Cut-Off Treaty at the United Nations multilateral conference on disarmament in Geneva.*

Results: The goal was met. During FY 1999, the Conference on Disarmament failed to renew the ad hoc committee with the negotiating mandate for the FMCT. The Department did support the U.S. Government interagency working group and the U.S. delegation in Geneva in their efforts to move forward on treaty negotiations. **Assessment:** Met Goal

NS 5-2. Minimizing the Risks of Proliferation. Work with the states of the former Soviet Union and others to minimize the risks of proliferation. **Assessment:** Exceeded Goal

Success will be measured by:

- *Continue to improve and integrate technology practices, facilities, and training for material protection, control, and accounting for approximately 650 metric tons of weapons-usable material at 53 locations.*

Results: Goal was exceeded by adding 2 additional sites to the 55 locations and initiating additional projects to meet performance targets. **Assessment:** Exceeded Goal

- *Field an initial joint DOE-Customs Service remote inspection system capable of identifying radiation signatures of potential nuclear smuggling packages.*

Results: This successful effort has come to be known as the Second Line of Defense (SLD) Program. The SLD program achieved multiple successes during FY 1998-99. These include: a signed protocol between the Russian Federation (RF) State Customs Committee and the Department of Energy and the submission of an SLD memorandum of understanding to the Russian interagency for approval. The SLD program is creating a site prioritization and selection study which includes near-term surveying of six Caspian/Black Sea ports for nuclear detection equipment deployment. Recently, SLD completed the installation of nuclear detection equipment at Sheremetyevo International Airport Phase 1 and Astrakan Seaport. For the training portions of the SLD program, a training implementation architecture was created for RF Customs, and nuclear detection training equipment for the two RF Customs training academies was procured. **Assessment:** Exceeded Goal

- *Further the Nuclear Cities Initiative (NEI) promoting cooperation with the closed cities in the Russian nuclear weapon complex to improve the prospects for defense conversion and employment of former weapon scientists.*

Results: During FY 1999, several projects were approved, including the Open Computing Center at Sarov and International Development Centers at Sarov, Snezhinsk and Zheleznogorsk. Preliminary work is underway on additional projects in the three closed cities where NCI works. **Assessment:** Exceeded Goal

- *Support non-proliferation objectives through concluding key science and technology agreements on: Geologic research connected to radioactive waste disposal with the Russian Ministry of Atomic energy; Renewal of the existing Peaceful Uses of Atomic Energy Agreement and beginning negotiations for a new and expanded agreement with Russia; and Specific cooperative projects under the U.S.-China Peaceful Uses of Nuclear Technologies Agreement.*

Results: Although some progress was made in terms of negotiating an agreement with the Russians on geologic disposal, issues relating to taxes and customs duties remain. The diplomatic note that the United States sent to extend the Peaceful Uses of Atomic Energy Agreement has not resulted in a reciprocal note from the Russians, which is needed to extend the agreement. Finally, we are awaiting the first Joint Coordinating Committee meeting under the U.S.-China Peaceful Uses of Nuclear Technologies Agreement. **Assessment:** Nearly Met Goal

Plan Of Action: A third series of negotiating sessions is being planned for February 2000 in Moscow for the geologic repository agreement. We have made senior Minatom staff aware of the failure of the Russian government to send us their diplomatic note regarding the Peaceful Uses Agreement and are alerting the Vice President's office of this failure; we are continuing to work with the Chinese government on setting up the first Joint Coordinating Committee meeting, though this is a sensitive issue now given other events relating to the Chinese.

NS 5-3. Advancing Nonproliferation Technology. Develop technologies and systems for detection of nuclear weapons proliferation and for treaty monitoring. **Assessment:** Met Goal

Success will be measured by:

- *Complete development and delivery to customers of two new counter-nuclear-smuggling detection technologies, one portable/hand-held and the other for wide area tracking and interdiction.*

Results: A portable gas-cooled germanium detector has been delivered to the International Atomic Energy Agency, which will use it to monitor uranium enrichment levels at blend-down facilities. A data fusion algorithm to aid in tracking moving radiation sources has been delivered to the operational customer. **Assessment:** Met Goal

- *Demonstrate, through airborne field tests, two new technologies that use chemical detection methods to remotely characterize weapons-of-mass-destruction proliferation activities.*

Results: Airborne field tests for both of the new technologies have been completed. The results are classified. **Assessment:** Met Goal

- *Deliver to the U.S. National Data Center for the CTBT the first half (Release 3) of an operational knowledge base that can be accessed by automated processing systems and human analysts to provide monitoring and verification confidence.*

Results: Delivery of Release 3 of the knowledge base, along with the automated user interfaces and interactive tools needed for operators to access that knowledge, was completed in July, 1999. Work is now proceeding on the next increment, Release 4. **Assessment:** Met Goal

NS 6-1. Providing Special Nuclear Power Systems for National Security. Provide the U.S. Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation. Meet ongoing and future national security requirements for special nuclear power systems. **Assessment:** Met Goal

Success will be measured by:

- *Ensure radiation exposures to workers or the public from Naval Reactors activities are within Federal limits and no significant findings result from environmental inspections by State and Federal regulators.*

Results: Radiological controls and environmental programs continue to be conducted in accordance with applicable requirements. Environmental inspections by Federal and State regulators conducted this fiscal year have identified no major findings. No radiation exposures from Naval Reactors activities exceeded Federal limits. **Assessment:** Met Goal

- *Develop new reactor plants, including the next generation reactor, which will be 85 percent complete by the end of FY 1999, and ensure the safety, performance reliability, and service life of operating reactors.*

Results: Naval Reactors continues to meet program goals in carrying out testing, development, and analyses in the applicable technology areas to ensure the safe and reliable operation of reactor plants in Navy warships. A key indicator of the success of these efforts is that nuclear powered warships have safely accumulated an additional 100 reactor years of operation this year, resulting in over 118 million miles steamed without a reactor incident.

Development of the next generation reactor for the Navy's New Attack Submarine is progressing ahead of schedule. Development and qualification testing is proceeding on components and systems, such as the control drive mechanism units and new concept steam generator to demonstrate design acceptability. On October 5, 1998, the Department of Defense approved the Navy's request for a new nuclear powered aircraft carrier (CVNX Class), including a new propulsion plant which Naval Reactors will develop. **Assessment:** Exceeded Goal

NS 7-1 Enhancing the Safety of Soviet-Designed Reactors and Promoting International Nuclear Safety. Assist countries in reducing the risks from Soviet-designed nuclear power plants and implement a self-sustaining nuclear safety improvement program capable of reaching internationally accepted

safety practices. Promote nuclear safety culture improvements internationally by providing strong leadership in international nuclear safety organizations and centers. **Assessment:** Met Goal

Success will be measured by:

- *Promote U.S. positions and practices in international forums that advocate safe reactor operations.*

Results: U.S. positions were represented in various international forums, most notably involving the IAEA (December 15-16, 1998, Final Meeting of the Advisory Group on the Safety of VVER and RBMK reactors) and the G-24 (March 25-26, 1999, Meeting of the Nuclear Safety Coordination Group). Additional meetings that have been held include the IAEA conferences on Strengthening Nuclear Safety in Eastern Europe (June 14-18, 1999) and Decommissioning the Kazakhstan BN-350 Breeder Reactor (August 6-8, 1999). Particular emphasis has been placed on coordinating and improving efforts to identify and correct Y2K induced problems at Soviet-designed NPPs. **Assessment:** Met Goal

- *Complete the installation of Safety Parameter Display Systems to improve operator response to emergencies at Leningrad-Unit 4 and Novororonezh-Unit 4 in Russia.*

Results: The Novovoronezh SPDS has been installed and passed the site acceptance test. The Leningrad SPDS project has been delayed due to U. S. Government sanctions against working with the Russian organization NIKIET. **Assessment:** Nearly Met Goal

- *Complete the development and implementation of an effective reactor plant operator training program at key plants based on the Systematic Approach to Training methodology used in the United States and provide and incorporate plant simulators into the operator training programs.*

Results: The transfer and adaptation of two training programs developed at the Khmelnytskyy NPP in Ukraine and the Balakovo NPP in Russia to other Soviet-designed plants in Russia was completed in July 1999. Similarly, development of additional reactor operator simulator training material at the Khmelnytskyy NPP was completed by August 1999. The Balakovo Unit 4 analytical simulator and the upgrade to the Zaporizhzhya Unit 5 full-scope simulator was completed and formally turned over to the NPPs in June 1999. **Assessment:** Met Goal

- *Complete plans for critical asset identification within the Department and test vulnerability assessment techniques in two components of the Energy Sector in countries of the former Soviet Union.*

Results: There is an error in the publication of this performance measure. This measure was intended to be for the Critical Infrastructure Protection Program, which is what we are going to report on further in this text. However, as it is written, with the words "in countries of the former Soviet Union," no such program exists. The following text should replace the description of this measure: "Complete plans for critical asset identification within the Department and test vulnerability assessment techniques in two components of the Energy Sector." The results of this revised measure follow: Critical Infrastructure protection was an unfunded mandate in FY 1999, yet with limited contributions within the Department, significant progress has been made for critical asset identification and testing of vulnerability assessment techniques. For example, as a result of DOE's focus on working with the Nation's electric and gas utilities to assess and improve the security of the information and control systems that run their operations, five electric power companies have undergone vulnerability assessments as part of this program. This program is now being expanded to cover gas and oil companies. **Assessment:** Below Expectation

Plan Of Action: Continue to establish criteria for critical asset identification focused on DOE facilities and conducting an Information Assurance Outreach Program focused on working with the nation's electric and gas utilities to assess and improve the security of the information and control systems that run their operations. The Critical Infrastructure Protection Task Force will also continue its focus to implement energy sector security and other PDD-63 related responsibilities.

- *Provide preliminary safety assessment results to determine near-term safety improvements at eight nuclear power plants in Russia and Ukraine.*

Results: Due to host countries modifying reactor operating plans and the imposition of sanctions against NIKIET, the goal of performing eight in-depth safety assessments was reduced to six. The work on all six projects is well underway. Preliminary safety assessment results have been completed for the plants by September 1999. **Assessment:** Met Goal

NS 7-3. Assisting in the Shutdown of the Chernobyl Nuclear Power Plant. Work closely with the United States Agency for International Development to assist in the multi-national effort to shut down Chornobyl Units 1, 2, and 3 in Ukraine before January 2001 and reduce the risk of possible collapse of the Unit 4 sarcophagus. **Assessment:** Met Goal

Success will be measured by:

- *Complete a comprehensive decommissioning engineering survey of Chornobyl Unit 1.*

Results: The decommissioning survey of Chornobyl Unit 1 has been completed. Survey results are being prepared for Departmental managers. **Assessment:** Met Goal

ENVIRONMENTAL QUALITY

EQ 1-1. Reducing Worker, Public, and Environmental Risks. Identify and fund projects to reduce the most serious risks first and prevent further increases in relative risk at all sites. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Stabilize and safely store 6 metric tons of heavy metal of spent nuclear fuel (SNF).*

Results: For FY 1999, 0.340 metric tons of heavy metal of spent nuclear fuel was stabilized. This was significantly different from the planned 6 metric tons of heavy metal to be stabilized. This difference was due to the Three Mile Island (TMI) SNF activities at Idaho (which were the bulk of the planned stabilization activities) being greatly impacted by a criticality issue discovered in the de-watering system operation that precluded processing the TMI canisters. **Assessment:** Below Expectation

Plan Of Action: Plans for continuing activities with the TMI fuel include restricted operation of the old system to process 13 canisters during November and December 1999, redesign of the de-watering system (complete October 1999), and restart of unrestricted TMI operations by February 2000. The one to two months before unrestricted restart are to complete Quality Assurance/Quality Control checks, update procedures and the Safety Analysis Report, and train qualified operators.

- *Stabilize 33,000 kilograms bulk of plutonium residues, 40 liters of plutonium solution, and 332 containers of plutonium metals/oxides.*

Results: For FY 1999, 31,033 kilograms bulk of plutonium residues, 16 liters of plutonium solution and 275 containers of plutonium metals/oxides were stabilized. The totals are not a significant difference from the planned activities. Rocky Flats Environmental Technology Site (RFETS) stabilized 30,864 kg bulk of plutonium residues and the Savannah River site (SR) stabilized 169 kg bulk. A significant portion of the SR stabilization work was going to be the RFETS sand, slag, and crucible (SS&C), approximately 1,000 kg bulk. However, technical issues with the shipping container delayed shipping of the material from RFETS to SR; consequently, SR stabilization activities were delayed. To offset the delay, SR stabilized plutonium residues stored at SR. An amended Record of Decision was issued in August 1999 to package RFETS SS&C for WIPP disposal. Stabilization of the 40 liters of plutonium solutions at Richland (RL) was not achieved due to delayed restart of the prototype stabilization system. This system is a one-of-a-kind laboratory system that was initially delayed due to seismic safety concerns and then by equipment failures during start-up system checks. The prototype plutonium solution stabilization system is now functioning properly. In FY 2000, a different process for solution stabilization will be installed and operated that is expected to recover the FY 1999 shortfall. This new system was used successfully at RFETS. RL changed the sequencing of the stabilization of plutonium metals and oxides because of relative risk priorities between the two material types. It was determined that metals should be repackaged only when the repackaging system is available in FY 2000. Therefore, stabilization of oxides began first in FY 1999. This affected the final number of containers stabilized by decreasing the expectation from 238 containers to 110. The decrease is due to a lower throughput rate for oxide stabilization. RL was able to stabilize 40 more containers than the expected 110. In addition, SR completed stabilization of 125 containers of plutonium metals and oxides. **Assessment:** Nearly Met Goal

EQ 2-1. Accelerating and Completing Geographic Site Cleanup. Complete clean up at 43 of the Department's 53 remaining sites by 2006. Continue cleanup at the 10 remaining sites, including the five largest sites, scheduled for completion in the post-2006 timeframe. Cleanup progress is measured by completion of geographic sites where the Office of Environmental Management is responsible for remediation of contaminants and other material. Interim progress is demonstrated by cleaning up portions of the EM geographic sites, referred to as "Release Sites" and "Facilities." Cleaning up these areas ultimately leads to the completion of the entire geographic site. **Assessment:** Met Goal

Success will be measured by:

- *Complete 80 facility decommissionings. (This will bring the number of completed facility decommissionings to about 530 out of a total inventory of approximately 3,350 facilities.)*

Results: Results indicate that 92 facility decommissionings were completed during FY 1999, achieving 115 percent of the performance target. **Assessment:** Exceeded Goal

- *Complete 120 facility decommissioning assessments.*

Results: Results indicate that 109 facility decommissioning assessments were completed during FY 1999, achieving 90 percent of the performance target. **Assessment:** Nearly Met Goal

- *Complete remediation at 3 geographic sites, increasing the total completed to 68 of 113 geographic sites. (This is a milestone of a FMFIA corrective action plan.)*

Results: Remediation of three geographic sites was completed during FY 1999: Ames Laboratory in Iowa, Princeton Plasma Physics Laboratory in New Jersey, and Sandia National Laboratories in California. **Assessment:** Met Goal

- *Complete 310 release site assessments.*

Results: Results indicate that 288 release site assessments were completed during FY 1999, or 93 percent of the performance target. Results achieved in FY 1999 are within 10 percent of the performance target and are not significantly different from the stated goal.

Assessment: Nearly Met Goal

- *Complete 165 release site cleanups. (This will bring the number of completed release site cleanups to about 4,290 out of a total inventory of approximately 9,700 release sites.)*

Results: Results indicate that 161 release site cleanups were completed during FY 1999. The year-end status is rated as "Met Goal" since the results equate to 98 percent of the performance target. **Assessment:** Nearly Met Goal

EQ 3-1. Making Disposal-Ready and Disposing of Waste Generated During Past and Current DOE Activities. Safely and expeditiously make disposal-ready and dispose of waste generated during past and current DOE activities. Prepare transuranic (TRU) waste for disposal at the Waste Isolation Pilot Plant (WIPP) and ship as soon as legal and regulatory constraints are removed. **Assessment:** Met Goal

Success will be measured by:

- *Ship 100 to 200 cubic meters of TRU waste to WIPP for disposal.*

Results: Approximately 280 cubic meters of TRU waste were successfully shipped to WIPP for disposal in FY 1999. **Assessment:** Exceeded Goal

- *Make disposal-ready 700 cubic meters of TRU waste.*

Results: The status of this commitment is intentionally listed as "unspecified." The make disposal-ready measure was intended to be a placeholder in the corporate performance measures to show interim progress in the TRU waste program until the Waste Isolation Pilot Plant (WIPP) was opened for disposal operations and actual shipments of TRU waste could be reported. As of September 30, 1999, approximately 370 cubic meters of TRU waste were made disposal-ready, 282 of which were received for disposal at WIPP. The delayed opening of WIPP postponed the preparation of additional waste for disposal. **Assessment:** Unspecified

- *Produce 15 canisters of HLW at the West Valley Demonstration Project.*

Results: The West Valley Demonstration Project produced 12 canisters of HLW in FY 1999. High level waste processing was impacted by an off-normal event in the Vitrification Facility in early August. The melter was put into idle for an extended period until the problem was resolved and operations resumed in late September. **Assessment:** Nearly Met Goal

- *Produce 200 canisters of high level waste (HLW) at the Defense Waste Processing Facility at the Savannah River Site.*

Results: The Defense Waste Processing Facility produced 236 canisters of HLW in FY 1999, exceeding the goal of 200 canisters. **Assessment:** Exceeded Goal

- *Dispose of 15,000 cubic meters of mixed low level waste.*

Results: Nine field offices disposed of a total of over 14,300 cubic meters of mixed low-level waste, very nearly meeting the goal of 15,000. **Assessment:** Nearly Met Goal

Plan Of Action: Availability of a DOE disposal site for mixed low-level waste in FY 2000 will facilitate meeting this success measure in the future.

- *Dispose of 73,000 cubic meters of low level waste.*

Results: Nine field offices disposed of a total of over 49,400 cubic meters of low level waste, significantly less than the goal of 73,000. Aggressive cleanup plans at Nevada Test Site did not materialize due to lack of agreement with the State on cleanup standards. Also, estimated large shipments of previously generated (stored) waste from Oak Ridge Operations Office to an offsite DOE disposal facility did not occur due to lack of NEPA authority. Even though the volume fell below expectations, it was one of the strongest years for disposal to date. **Assessment:** Below Expectation

Plan Of Action: The Department will work to resolve obstacles to meeting future performance goals.

EQ 4-1. Preventing Future Pollution. Incorporate pollution prevention, including waste minimization, recycling, and reuse of materials, into all DOE activities in accordance with Executive Order 13101. **Assessment:** Met Goal

Success will be measured by:

- *Reduce by 10 percent the waste resulting from the execution of cleanup, stabilization, and decommissioning activities, from the annual planned baseline volumes.*

Results: The Department avoided over 27,000 cubic meters of waste from pollution prevention projects for its cleanup, stabilization, and decommissioning activities. This reduction represents more than the 16,000 cubic meters reduction committed in the EM Corporate Commitment document. The Department fully met this measure. **Assessment:** Exceeded Goal

- *Reduce routine waste generation by 45 percent based on 1993 waste generation rates. (Data for reporting will be available at the end of calendar year 1999.)*

Results: Data on routine waste generation will be collected at the beginning of calendar year 2000 and will not be available until April 2000. However, the Department was able to achieve this reduction in FY 1998 and there is no indication that waste generation will increase significantly in FY 1999. **Assessment:** Unspecified

Plan Of Action: This measure will be changed in order to provide results in future reports.

- *Implement projects that reduce/avoid the generation of radioactive, mixed, and hazardous wastes by 2,000 cubic meters.*

Results: The Department implemented pollution prevention projects in the first half of 1999 that avoided

5,000 cubic meters of wastes. This performance measure has been successfully met. **Assessment:** Exceeded Goal

EQ 5-1. Continuing with Yucca Mountain Site Characterization. Complete the scientific and technical analyses of the Yucca Mountain site, and if it is determined to be suitable for a geologic repository, obtain a license from the Nuclear Regulatory Commission. **Assessment:** Met Goal

Success will be measured by:

- *Complete peer review of the total system performance assessment to provide formal, independent evaluation and critique.*

Results: The peer review of the total system performance assessment was completed on May 26, 1999, and the Final Peer Review Report containing comment responses was completed on August 12, 1999. The review panel's recommendations have been factored into FY 2000 and outyear planning. **Assessment:** Met Goal

- *Complete repository and waste package design inputs for use in total system performance assessment for the repository license application.*

Results: Repository and waste package design inputs were completed on August 27, 1999, and will be used in the development of the total system performance assessment for the Yucca Mountain site recommendation. **Assessment:** Met Goal

- *Publish a draft Environmental Impact Statement (EIS). The Nuclear Waste Policy Act requires a Final EIS to accompany the site recommendation.*

Results: The draft Environmental Impact Statement was completed in July 1999 and published in the *Federal Register* on August 13, 1999. **Assessment:** Met Goal

EQ 5-2. Developing Waste Acceptance and Transportation Capability. Maintain the capability to initiate plans to transport spent nuclear fuel and high level waste as soon as a Federal facility is designated under the Nuclear Waste Policy Act, as amended.

No performance measures were proposed for this objective in FY 1999.

EQ 6-1. Reducing Environmental Cleanup Costs Through Enhanced Performance. Significantly enhance performance, increase efficiency, and reduce costs through increased use of fixed-price competitive contracting, optimized project sequencing, recycling and other waste minimization techniques, privatization, systems engineering, and benchmarking. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Continue the development and implementation of the privatization strategy by: Commencing Phase II (design completion and facility construction) of the Idaho National Engineering and Environmental Laboratory (INEEL) Advanced Mixed Waste Treatment Project (AMWTP); Awarding the contract for the INEEL Spent Nuclear Fuel (SNF) Dry Storage Project; and Awarding the contract for the Oak Ridge Waste Disposal Project (design completion/construction/operation).*

Results: The DOE Record of Decision on the AMWTP Environmental Impact Statement was signed on March 22, 1999. The decision was to construct and operate an AMWTP facility at the INEEL in accordance with DOE's contract with BNFL Inc. Commencement of Phase II was authorized by DOE on May 4, 1999. BNFL Inc. has commenced Phase II activities. **Assessment:** Met Goal.

Awarding the contract for the INEEL SNF Dry Storage Project: The RFP was issued on January 29, 1999. Contract award was planned by the end of September 1999. However, issues arose that have precluded awarding of this contract to date. These issues include: additional information required from the bidders; a DOE policy decision needed on labor issues; and potential protest issues. The tentative award date is now January 2000. **Assessment:** Nearly Met Goal

Awarding the contract for the Oak Ridge Waste Disposal Project: Contract award is expected in December 1999 following conclusion of the Congressional notification period and approval of the CERCLA Record of Decision. The delay in contract award beyond the original FY 1999 schedule does not significantly impact the goal of achieving cleanup program efficiencies and reducing costs through privatization. The Request for Proposals was issued in May 1999, four months behind schedule. The additional effort that went into the development and review of the solicitation achieved the desired outcome. An extremely cost-effective proposal was submitted and a vendor was selected in August 1999. Parallel efforts related to CERCLA documentation and Congressional reporting were accelerated to reduce the overall schedule impact. The Congressional notification report was submitted in September 1999, in accordance with Section 3132 of the National Defense Authorization Act for FY 1998. EPA, the Tennessee Department of Environment and Conservation and DOE are expected to approve the CERCLA Record of Decision in early November. Based on the vendor proposal, the contract award will represent a significant cost savings compared with the previously validated and independently reviewed cost estimates for this project. **Assessment:** Nearly Met Goal

EQ 6-2. Developing and Deploying Innovative Cleanup Technologies. Develop and deploy innovative environmental cleanup, nuclear waste, and spent fuel treatment technologies that reduce cost, resolve currently intractable problems, and/or are more protective of workers and the environment. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Meet all commitments made to the Ohio Environmental Protection Agency and the Defense Nuclear Facilities Safety Board to ensure the safety of the Department's inventory of depleted uranium hexafluoride.*

Results: The Department continues to manage its depleted uranium cylinders in a manner consistent with both Ohio EPA and DNFSB commitments. The Department continues to maintain the inventory in a manner to ensure safety of the workers, community, and environment. All commitments to the OEPA continue to be met with the UF6 Cylinder Project at Portsmouth as validated by the OEPA visit this year. The State reviewed our compliance with the Director's Final Findings and Orders and had no findings. The required periodic inspections were completed in April; radiological surveys were completed on all full DUF6 cylinders in July; ultrasonic wall measurements were completed on 150 cylinders in August and quarterly sampling of rainwater run-off continues.

All formal commitments to DNFSB Recommendation 95-1 related to systems engineering and safety analysis continue to be met. In addition, since the issuance of Recommendation 95-1, 3768 cylinders have been painted, which represents about 35 percent of the "worst case" cylinder population. A status review of the Depleted Uranium Cylinder Project with the DNFSB staff in July 1999 had no significant findings. **Assessment:** Met Goal

- *Maintain the Fast Flux Test Facility in a safe, environmentally compliant standby condition to permit implementation of an anticipated Secretarial decision in FY 1999 to deactivate or pursue potential restart to support a range of national research reactor requirements.*

Results: The facility was maintained in compliance with all applicable Federal and state health, safety, and environmental regulations during FY 1999. In August 1999, the Department announced the Secretary of Energy's decision to conduct a National Environmental Policy Act review of the environmental impacts associated with returning the Fast Flux Test Facility to operation. This decision by Secretary Richardson followed careful consideration of the results from the 90-day program scoping plan prepared by Pacific Northwest National Laboratory, recommendations from the Department's independent Nuclear Energy Research Advisory Committee (NERAC), and advice from staff. **Assessment:** Met Goal

- *Complete the conversion and disposition of 100 percent of the secondary sodium coolant from the Experimental Breeder Reactor-II and 40 percent of the Fermi reactor sodium coolant in storage at Argonne National Laboratory-West.*

Results: The conversion of the sodium coolant identified in this measure was completed, but not the disposition. Specifically, Argonne National Laboratory (ANL) has treated 100 percent of secondary sodium coolant from the Experimental Breeder Reactor-II and 40 percent of the Fermi sodium coolant, using the Sodium Processing Facility (SPF) at ANL-West. This treatment resulted in approximately 945 drums of solidified sodium hydroxide which are to be disposed of in the Radioactive Waste Management Complex (RWMC). **Assessment:** Nearly Met Goal

Plan Of Action: Activities are currently underway to confirm all the drums meet disposal requirements. Once these confirmation actions have been finalized, a revised schedule for sodium disposal at the RWMC will be established. Sodium disposal at the RWMC is expected to be completed during FY 2000.

- *Accomplish 60 innovative technology deployments.*

Results: The field has reported 125 first-time innovative technology deployments. **Assessment:** Exceeded Goal

- *Demonstrate 22 alternative technology systems that meet the performance-specification based needs as identified by the Site Technology Coordination Groups.*

Results: In FY 1999, 27 full-scale demonstrations of innovative technologies were completed. **Assessment:** Exceeded Goal

- *Make 40 alternative technology systems ready for implementation with cost and engineering performance data.*

Results: As reported by the Focus Areas and documented with Innovative Technology Summary Reports, 40 innovative technologies were made ready for implementation. **Assessment:** Met Goal

- *Complete the demonstration of the electrometallurgical spent fuel treatment technology by the end of FY1999 using Experimental Breeder Reactor-II spent nuclear fuel.*

Results: The demonstration of the electrometallurgical spent fuel treatment technology was completed. The demonstration involved EBR-II "driver" fuel and EBR-II "blanket" fuel. Operations verified repeatability and sustained treatment throughput rates of the electrometallurgical treatment process for both of these fuel types. The National Academy of Science Committee on Electrometallurgical Treatment Techniques for DOE Spent Nuclear Fuel has been given the final demonstration data and reports and will independently confirm that the demonstration met all success criteria. The Committee's findings and recommendations will be provided in a National Research Council report to be published in December 1999. **Assessment:** Met Goal

EQ 6-3. Completing Deactiviation of Surplus Facilities. Reduce operating costs by completing deactivation of surplus facilities and placing them in a safe and environmentally sound condition, requiring minimal surveillance and maintenance. **Assessment:** Met Goal

Success will be measured by:

- *Complete 65 surplus facility deactivations.*

Results: For FY 1999, a total of 64 facility deactivations were completed. **Assessment:** Nearly Met Goal

EQ 7-1. Making DOE Lands and Facilities Available for Other Uses. In conjunction with stakeholders, develop comprehensive land use plans for DOE

sites that provide information on alternative uses, ownership, environmental requirements, and implementation schedules. **Assessment:** Met Goal

Success will be measured by:

- *Complete mission justification analysis for land and facilities at 5 of the remaining 15 sites. (FI)*

Results: Mission justification analyses for Cheltenham SECOM Site (ALO), Keswick Switchyard (WAPA), Nevada Support Facility (NVO), Hanford Site, Savannah River Plant, and Brookhaven National Laboratory (BNL), were completed in FY 1999 and subsequently surveyed by GSA. **Assessment:** Met Goal

- *Release a background report on Long-term Stewardship ("Moving from Cleanup to Stewardship") by March 31, 1999. (This report was one of the commitments published in the June 1998 Paths to Closure document.)*

Results: The background report was published in September 1999. **Assessment:** Met Goal

- *Begin the formal study on long-term stewardship pursuant to the 1998 Programmatic Environmental Impact Statement (PEIS) settlement agreement, which requires a public scoping and comment process, and complete the scoping process portion of the study.*

Results: The background report on long-term stewardship was completed as part of Paths to Closure commitments. The Department has developed plans, including milestones, deliverables, schedules, cost estimates, and roles and responsibilities. A Notice of Intent was published on October 6. A Public meeting was held on October 28. **Assessment:** Met Goal

SCIENCE AND TECHNOLOGY

ST 1-1. Conducting Relevant, High Quality, Innovative Research That Responds to the Needs of the DOE Mission. Conduct relevant, high quality, innovative research that responds to the needs of the DOE mission. **Assessment:** Met Goal

Success will be measured by:

- *Complete sequencing of 30 million subunits and draft sequence of 30 million additional subunits of human DNA for submission to publicly accessible databases.*

Results: The Department's human genome program (HGP) contribution to the determination of the complete DNA sequence are part of a coordinated international effort. During the first months of FY 1999, the DNA sequencing goals of this international effort underwent significant discussion and change. As a result, the international community agreed to complete a high quality draft of the human genome in the spring of 2000 and to determine the complete sequence of the human genome by 2003, both goals several years ahead of the original schedule. The high quality working draft of the human genome will provide scientists and medical researchers with much of the information they need to begin unraveling the mysteries of life and for developing new drugs and medical treatments several years before the complete sequence is available

During FY 1999, the HGP human DNA sequencing efforts at the DOE Joint Genome Institute, the University of Washington, and Stanford University combined to produce 15.2 million subunits of human DNA sequenced to "Bermuda Standards," the accepted international quality standard. Thus, we did not meet the original first goal of 30 million subunits completely sequenced. However, in accordance with the new goals of the international human genome project, the HGP produced 55 million subunits of "high quality draft" and 70 million of "phase I draft" sequences, greatly exceeding the second goal of 30 million additional subunits of draft human DNA sequence. The level of DNA sequence produced by the DOE between October 1, 1998 and September 30, 1999 actually reflects an increase in sequencing output over DOE's original goals for FY 1999 and is consistent with the current goals of the international human genome project. **Assessment:** Nearly Met Goal

- *Maintain optimum operating schedules at major scientific user facilities to serve thousands of researchers from universities, national laboratories, and industry.*

Results: The Office of Science is operating its major scientific user facilities under optimum schedules to serve researchers at universities, national laboratories, and industry. These facilities enable the acquisition of new knowledge that often cannot be obtained by any other means. This fiscal year, many thousands of scientists are conducting experiments at the user facilities, and thousands of other researchers collaborate with these users to analyze the data from the

experiments and publish new scientific findings in peer-reviewed journals. **Assessment:** Met Goal

ST 1-2. Providing New Insights Into the Fundamental Nature of Energy and Matter. Provide new insights into the fundamental nature of energy and matter. **Assessment:** Met Goal

Success will be measured by:

- *Complete preparations and begin operation of the newly completed B-factory at the Stanford Linear Accelerator Center and the Main Injector at Fermilab.*

Results: B-factory: The B-factory construction was completed within cost and on schedule. It began operations in May 1999, and the run is going extremely well—so well, in fact, that a two-month shutdown scheduled for September was postponed until late December. It has already achieved a world record luminosity of 1.35 x 1033 and, in this short time, has already reached about half of its design luminosity. Main Injector: Construction of the Fermilab Main Injector was completed within cost and on schedule, and it is operating in support of a Tevatron fixed target run. **Assessment:** Met Goal

- *Complete construction and begin operation of the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory.*

Results: The RHIC construction project was completed on-cost and on-schedule. **Assessment:** Met Goal

- *Deliver on the 1999 US/DOE commitments to the international Large Hadron Collider project.*

Results: The U.S. Large Hadron Collider (LHC) projects—U.S. LHC Accelerator, U.S. ATLAS, and U.S. CMS—are now producing equipment for the LHC and ATLAS and CMS experiments. In the final quarter of FY 1999, the U.S. collaborators delivered superconducting cable measurement equipment and produced prototype components for the detectors' calorimeters and data acquisition electronics. **Assessment:** Met Goal

ST 1-3. Searching for and Utilizing the Best Scientific Talent from All Sources to Perform DOE Research. Search for and utilize the best talent from all sources to perform DOE research. **Assessment:** Met Goal

Success will be measured by:

- *Complete a search for and name Directors of the Argonne National Laboratory, Fermi National Accelerator Laboratory, and Stanford Linear Accelerator Center (SLAC).*

Results: SLAC: On December 22, 1998, Jonathan Dorfan, a professor of physics who, since 1994, led the B-factory project to pursue the question of why we live in a universe dominated by matter rather than equal parts of matter and anti-matter, was named the Director of Stanford Linear Accelerator Center. Fermi: On March 5, 1999, Michael Witherell, a professor at the University of California, Santa Barbara, with a distinguished career in experimental physics, was named Fermilab Director. Argonne: The Laboratory Director Search Committee is on schedule. The Committee expects to develop a list of about 15 highly qualified candidates from the initial slate by year-end. **Assessment:** Nearly Met Goal

ST 1-4. Developing Science to Support DOE's Participation in Energy and Other National Policy Formulations. Develop science to support DOE's participation in energy and other national policy formulations. **Assessment:** Met Goal

Success will be measured by:

- *Continue collaborative efforts with NASA on space science and exploration.*

Results: (1) Alpha Magnetic Spectrometer (AMS): Data from last year's shuttle flight has been analyzed and interesting results were published. All aspects are on track for the AMS to go on the international space station in 2004 (or perhaps later). (2) Gamma-Ray Large Area Space Telescope (GLAST): SLAC has developed a prototype detector module which is currently being tested. They have submitted a proposal outlining their scientific and technical plan in response to NASA's Announcement of Opportunity. The proposal is currently under review, and results are expected by next March. (3) Booster Application Facility (BAF) (Radiation simulator at Brookhaven for manned Mars mission): Developing funding profile for this $33 million project (profile completed after March 2000). **Assessment:** Met Goal

- *Initiate a new joint Biological and Environmental Research-Basic Energy Sciences program in fundamental science that will underpin new opportunities and technologies in carbon capture.*

Results: A draft Carbon Sequestration Roadmap report has been authored by over 80 scientists and published with a "Techline." This draft report (the final is to be published early calendar 2000) is another step in the process to identify and prioritize research topics for a long-term research program in carbon sequestration. Two new Centers for carbon sequestration have been selected through competitive peer review process and awards have been made. One center, led by Oak Ridge National Laboratory, Pacific Northwest National Laboratory, and Argonne National Laboratory and collaborating with six universities and institutes, supports research that investigates the enhancement of the natural terrestrial cycle. The other center, led by Lawrence Livermore National Laboratory and Lawrence Berkeley National Laboratory and also collaborating with six universities and research laboratories, investigates enhancing the natural oceanic cycle and the efficacy and impacts of deep carbon dioxide injection. A workshop to open the research agenda priority-setting process to the public was held in September. Over 200 participants related their own experience with carbon sequestration research and offered opinions on priorities. An editorial and favorable articles were published in *Nature* magazine and the *National Journal* about the work-

shop and the research program. A solicitation for fundamental research in carbon management was issued, and projects ranging from fundamental studies on photosynthesis to lightweight materials, photovoltaics, catalysis, membranes and separations, and reservoir characterization were funded. In addition, three microbes that are critical to the natural carbon cycle sequestration have been selected, and sequencing their genomes has already started. **Assessment:** Exceeded Goal

- *Determine 70 percent of the DNA sequence of 10 additional microbes with potential use in waste cleanup or energy production.*

Results: During FY 1999, the DNA sequences of five microbes with potential use in waste cleanup or energy production were completely determined. More than 95 percent of the DNA sequences of seven additional microbes were determined and made available to the public. Finally, more than 70 percent of the DNA sequence from one additional microbe has been determined and made publicly available. Among these organisms are the remarkable radiation resistant microbe Deinococcus radiodurans, a potential workhorse for helping cleanup DOE waste sites, and Shewenella putrefaciens, an organism that can consume toxic organic pollutants and convert toxic metals and radionuclides to less toxic forms. **Assessment:** Exceeded Goal

ST 1-5. Supporting Emerging Sciences That Are Important to the Future of DOE and the Nation. Support emerging sciences that are important to the future of DOE and the Nation, including interdisciplinary research that addresses the Nation's most pressing problems. **Assessment:** Met Goal

Success will be measured by:

- *Initiate change-out of the beryllium reflector at the High Flux Isotope Reactor at Oak Ridge National Laboratory and improvements to the facility's beam tubes and monochromators.*

Results: Design of the replacement beryllium reflector for the High Flux Isotope Reactor at Oak Ridge National Laboratory has been initiated, and modifications to the facility's HB-2 beam tube are underway to allow beam access for additional neutron scattering instruments, which will receive 2 to 3 times higher neutron flux than currently available. **Assessment:** Met Goal

- *Conduct, with at least 25 to 30 patients, Boron Neutron Capture Therapy (BNCT) Research Phase I/II clinical trials at reactor sources with neutrons.*

Results: Accrual of patients into the phase I clinical trial has been completed. A total of 54 patients were treated during calender years 1998-1999, 20 patients during 1999. Patient treatments were terminated because the clinical endpoint of the study, maximum safe dose, was reached. Clinical follow-up of patients who were treated is ongoing with further analysis of the clinical data. **Assessment:** Below Expectation

- *Discover new biological structures with more than 60 percent of the new biological structures published in the peer-reviewed literature resulting from data generated as part of the structural biology synchrotron user station program.*

Results: Structural biology stations at the synchrotron user facilities were utilized 100 percent of the operating time. There were 231 users in 1999, an increase of 30 percent compared to the previous year. More than 60 percent of the high-resolution three dimensional protein structures were published in peer reviewed journals. Among the many protein structures determined was the ribosome, the protein-synthesizing machinery in cells. It is the largest protein structure determined to this date. **Assessment:** Met Goal

ST 1-6. Leveraging Research Opportunities. Leverage research opportunities through science partnerships and pursue international science collaborations. **Assessment:** Met Goal

Success will be measured by:

- *Conduct five intensive operations periods at the Atmospheric Radiation Measurement (ARM) Southern Great Plains site and redeploy an atmospheric radiation and cloud station from the Arctic Ocean to Atqasuk, Alaska.*

Results: The deployment of equipment from the SHEBA operation in the Arctic Ocean to the Atqasuk site, 50 km south of Barrow, was completed in September 1999. Its operation will complement the North Slope of Alaska Barrow site by providing measurements over a land surface (the Barrow site is located on the shore of the Arctic Ocean and provides an air/sea/atmosphere interface environment). Data from Atqasuk are available from the ARM archive. During FY 1999 the Southern Great Plains site was fully operational, providing a continuing data set designed to improve climate prediction, and exceeded the five intensive operations periods goal. In addition, ARM supported two intensive operations periods at the North Slope of Alaska site and one at the Tropical Western Pacific site. The results will impact the way measurements of shortwave radiation are interpreted and will provide improved measurements of water vapor, particularly for severely dry conditions such as found in extremely cold polar environments. The Tropical Western Pacific activity is important to improving the performance of large-scale models for open ocean areas where there is scant knowledge and little quantified understanding of cloud and cloud-radiation interaction processes. **Assessment:** Exceeded Goal

- *Provide advanced simulations of possible climate response to increasing atmospheric concentrations of greenhouse gases at subcontinental spatial scales.*

Results: The Parallel Climate Model (PCM), which is a fully coupled atmosphere-ocean-sea ice model, was designed to be efficient on a range of high performance computer systems so that it was easily portable and capable of running at several different computational centers. As a result, four sets of ensemble

simulations have either been completed or will be finished within the next few months using the PCM. The first is historical climate integration for the period from 1870-1990 (i.e., best estimate of conditions in 1990). Additionally, three future climate projections are included using different atmospheric forcing assumptions; the Intergovernmental Panel on Climate Change (IPCC) suggested climate change WRE450, WRE550, and WRE650 scenarios. These include rates of change for greenhouse gases, ozone, sulfate aerosols, etc. The model runs will be used for the next IPCC 2000 Scientific Assessment. The data are being made available through a publicly accessible archive for use by other researchers. **Assessment:** Met Goal

- *Restructure the technology program sub-element in the Fusion Energy Science Program to focus on domestic fusion program needs while maintaining strategic participation in international collaborative activities.*

Results: Major restructuring began in late 1998 to shift from tasks related to the International Thermonuclear Experimental Reactor (ITER) project to a broad portfolio of design, analysis, and R&D activities. These activities serve our domestic fusion program and international collaboration interests, emphasize enabling technologies that support domestic plasma physics experiments and provide opportunities for access to experiments and facilities worldwide with test conditions and capabilities not available in the United States. **Assessment:** Met Goal

ST 2-1. Developing the Technologies to Meet DOE's Energy, National Security, and Environmental Goals. Develop the technologies required to meet DOE's energy, national security, and environmental quality goals. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Supply quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications and maintain 95 percent on-time deliveries.*

Results: Isotope Programs delivered 1,126 shipments in this period to domestic and overseas customers. Only two orders did not meet customer specifications. One was replaced immediately to the customer's satisfaction. The second was rescheduled to accommodate the customer's revised needs. This accomplished on-time delivery records greater than 95 percent, exceeding our goal. **Assessment:** Exceeded Goal

- *Initiate construction and commissioning of the Los Alamos Target Irradiation Station, to improve isotope quality with greater operating efficiency.*

Results: Construction activities that will lead to the commissioning of the Isotope Production Facility (formerly the Los Alamos Target Irradiation Station) have been initiated. On November 16, 1998, Title I/II Design and the procurement of Special Facilities Equipment was authorized. In January 1999, the facility design contract was awarded to Merrick & Company. Overall, the design activities are progressing at a pace that will allow the project to be completed on schedule. The project was subjected to a congressionally mandated independent design review that identified only minor issues, contained very positive remarks and cited several noteworthy good practices. The review team specifically noted the excellent communications among project team members and that the project was well positioned for success. **Assessment:** Met Goal

- *Complete equipment installation necessary for an emergency backup supply of molybdenum-99, issue a request for proposals to privatize molybdenum-99 production and business activities by May 1999, and after evaluation, award a contract by September 1999 to the most qualified firm.*

Results: The molybdenum-99 project accomplished 100 percent of the construction work required to provide an emergency backup supply, and 90 percent of the equipment was procured. An innovative and streamlined procurement process for privatization of U.S. molybdenum-99 production was also completed. During 1999, the molybdenum-99 supply situation improved to such an extent that the U.S. Government decided not to complete equipment installation and testing. The need for an emergency backup for molybdenum-99 was greatly mitigated by the progress in the construction of new Canadian reactors and the expansion of other suppliers' capacity. Therefore, it was decided that Federal investment to complete equipment installation was no longer necessary. While the U.S. molybdenum-99 facility is ready and available for privatization proposals, the improved supply situation has discouraged potential investors. **Assessment:** Nearly Met Goal

- *Develop the Advanced Computational Testing and Simulation Toolkit so that simulation can be used in place of experiments which are too dangerous, expensive, inaccessible, or politically unacceptable.*

Results: Three important elements applied to examine the success of development of the ACTS toolkit include the following: more clients using the toolkit, improved performance of the tools for the clients, and providing new capabilities. A specific example of success where two of these elements apply is the following: The latest generation of ordinary differential equation solvers for systems, whose behavior combines fine scale and large scale features, developed at LLNL has been interfaced with a large family of parallel algebraic solvers developed at ANL. This coupled software system has enabled several new applications. One of these is a collaboration of researchers at Louisiana Tech University and Oak Ridge National Laboratory (ORNL) to develop a code for fully three-dimensional simulations of the dynamics of microstructural interactions in materials. It requires the solution of a large number of ordinary differential equations. Using the toolkit, the problem size was expanded from on the order of 100's of degrees of freedom to on the order of 10,000's. Another example of the success is that a common component architecture has emerged that allows components like the equation solver to transparently couple to other software components by following a standard specification.

Assessment: Exceeded Goal

ST 2-2. Pursuing Technology Research Partnerships. Pursue technology research partnerships with industry, academia, and other government agencies and proactively accelerate the transition of technologies to end users. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Provide fundamental research in environmental sciences, biology, molecular sciences, and computational modeling that will underpin the cleanup of contaminated sites.*

Results: During FY 1999, sampling of both groundwater and sediment was conducted at the Shiprock, New Mexico, and Gunnison, Colorado, Uranium Mill Tailing Remediation Action (UMTRA) Program Sites. The purpose of collecting the samples was to determine the dominant electron accepting processes occurring at these sites and to determine if biotransformation of U and other contaminants was occurring under field conditions. Results indicate that a diverse and active microbial community is present in the subsurface at the Shiprock site and that it may be possible to move the site from dominantly nitrate reduction to sulfate reduction by addition of an electron donor such as formate. At Gunnison, one of the locations sampled appears to be sulfate reducing. **Assessment:** Met Goal

- *Complete the initial SC/EM Pilot Collaborative Research Program and, in cooperation with EM, initiate development of the most promising cleanup technologies arising from these projects.*

Results: The SC/EM Pilot Collaborative Research Program has been completed. **Assessment:** Below Expectation

Plan Of Action: A current lack of funds has prevented efforts to initiate the further development of technologies that have arisen out of these research project. One of the nine technologies has been reviewed and received funding in FY 1999 from the Environmental Management Science program.

ST 3-1. Managing the National Laboratories, Science-User Facilities, and Other Research Providers and Research Facilities. Manage the National Laboratories, science-user facilities, and other DOE research providers and research facilities in a more integrated, responsive, and cost-effective way, building on unique core strengths and corresponding roles. Design, construct, and operate research facilities in a timely and cost-effective manner. **Assessment:** Met Goal

Success will be measured by:

- *Begin Title I design activities, initiate subcontracts and long-lead procurements, and continue R&D work necessary to begin construction activities of the Spallation Neutron Source.*

Results: Title I design activities, initial subcontract work, and long-lead procurements have been initiated. The R&D work necessary to begin construction activities of the Spallation Neutron Source is continuing. **Assessment:** Met Goal

- *Complete prototype development of a "virtual laboratory" approach and implement at least three program trial applications.*

Results: The approach for a prototype "virtual laboratory" varies somewhat as a function of the science discipline and goals involved. Two pilot collaboratories are being funded as a joint effort across science and technology offices. The Materials Microcharacterization Collaboratory has multiple sites available where remote users can participate in in-situ electron microscopy experiments. On the other hand, the Diesel Combustion Collaboratory has focused on providing technology for synchronous sharing of video, audio, data, and applications to make doing the science, engineering, and information exchange for the Diesel Combustion Research CRADA partners more efficient. The third project, one of the Grand Challenges, has recently made significant progress toward quasi-real time 3-D imaging of samples on an Advanced Photon Source tomographic beamline. In addition, 25 percent of the projects approved for the Virtual NMR Facility at the EMSL plan to use the facility remotely, a clear endorsement of the value of collaborative technology. **Assessment:** Exceeded Goal

- *Organize a national research team for the National Spherical Torus Experiment (NSTX) project at Princeton Plasma Physics Laboratory, begin experimental operations by June 1999, and complete the project by September 1999.*

Results: The national research team is in place and functioning effectively. The first-plasma milestone was achieved on February 15, 1999. Experimental results through the end of the fiscal year have demonstrated plasma currents of 450 kA. Remote collaboration capabilities have been implemented to allow offsite researchers to fully participate in research colloquiums and reviews. The construction project has been completed. Antennas for radio frequency heating were installed for use in FY 2000 experiments. Diagnostics installations planned for the fiscal year were completed on schedule. **Assessment:** Met Goal

- *Receive from the Program Advisory Committees (PACs), an assessment, of the quality of research and program relevance at major Fusion Energy operating facilities.*

Results: Each of the three major fusion facilities has a PAC that provides the facility operator with advice on the relevance and quality of proposed research. In addition, the Fusion Facilities Coordinating Committee advises the facilities operators on issues common to all fusion facilities. Each facility PAC and the Fusion Facilities Coordinating Committee met during the fiscal year. This activity will continue throughout the lifetime of each facility. **Assessment:** Met Goal

- *Accomplish the milestone of the Federal Managers Financial Integrity Act (FMFIA) corrective action plan to complete corrective actions identified in the DOE Action Plan for Improved Management of Brookhaven National Laboratory.*

Results: During FY 1999, DOE observed many positive changes at Brookhaven National Laboratory. In June 1999, DOE's Office of Environment, Safety and Health performed a Safety Management evaluation of BNL and determined extensive progress was made in establishing an effective Integrated Safety Management System. Particular improvements were recognized in Management Commitment to ES&H. In addition, on November 16, 1999, Secretary Richardson announced his decision to permanently shut down the High Flux Beam Reactor. This latter action completes the Department's commitment to examine its options regarding the future path for this reactor. Based on the observed cultural and management changes, the Department believes that the weaknesses at Brookhaven National Laboratory are being adequately addressed. **Assessment:** Met Goal

ST 3-3. Improving the Management, Dissemination, Sharing, and Use of Technical Information Across DOE. Improve the management, dissemination, sharing, and use of scientific and technical information. **Assessment:** Met Goal

Success will be measured by:

- *Implement streamlined policies and procedures for managing the Department's scientific and technical information, using decentralized sources in a cost-effective and efficient manner.*

Results: All major DOE laboratories, contractor sites, and field locations (over 40 unique sites) have been connected to an online means of electronically capturing DOE-sponsored scientific and technical information in FY 1999. The DOE Energy Link (E-Link) system was developed and implemented to provide a more effective complex-wide means of announcing and making full-text information electronically accessible. Over 80 percent of DOE site submissions for announcement of research results is now received electronically, as is over 30 percent of the full-text documents, far ahead of the schedule for achieving 100 percent electronic submission by 2004. Streamlined policies and procedures to facilitate electronic information management in accordance with DOE G 241.1 were developed and approved by the DOE scientific and technical community with revisions to encourage use of electronic means for announcing and providing distributed access to DOE scientific and technical information. Transition of in-house processes to an electronic environment is now a performance indicator for most DOE field and contractor elements. As a result, effective policies, procedures, and mechanisms are now in place to provide a common, complex-wide means of announcing and delivering information in a distributed electronic environment starting at the document's point-of-origin. Consistency, comprehensiveness, and ease of access are improved for the customer, and the value of DOE's research results are enhanced. **Assessment:** Exceeded Goal

- *Implement a common distributed electronic infrastructure across DOE that effectively provides researchers and the public timely access to the Department's scientific and technical information.*

Results: Over 1.5 million accesses to products containing DOE's scientific and technical information were recorded in FY 1999, exceeding the target of 1.25 million. The Web-based EnergyFiles Virtual Library of Energy Science and Technology initiated single-query searching across 500 heterogeneous databases and web sites through the development and implementation of EnergyPortal as its search engine, providing first-of-its-kind distributed searching of full-text and other record types with no requirements for standardization. The DOE Information Bridge, an element of EnergyFiles that provides online full-text of DOE research reports at no charge via the Internet, added over 26,000 documents and had over 98,000 full-text documents downloaded by customers in FY 1999, far exceeding projections of 15,000 and 50,000, respectively, for the fiscal year.

As a result of these accomplishments, DOE researchers, academia, industry, and the public have greater, more effective, and more efficient access to full-text and other scientific and technical information describing energy-related research activities across the Complex and around the world. The accomplishments support scientific discovery within the Complex, meet the DOE requirements for providing public access to government information, and establish the foundation for a national library of energy science and technology. **Assessment:** Exceeded Goal

- *Conduct a user satisfaction survey to demonstrate that at least 75 percent are satisfied or very satisfied with our computer facilities and networks.*

Results: The measure of user satisfaction for the SCIENCE computer facility, the National Energy Research Scientific Computing (NERSC) Center, and the SCIENCE network, ESnet, have been determined separately. Both of these are operated 24 hours a day, 7 days a week, 52 weeks a year.

For ESnet, the measure was determined in an independent review in May 1998. Comments from the May 1998 review are: "The committee found the core services provided by ESnet to be excellent in quality based on both qualitative (user reports) and quantitative (network measurement) data. Further, the cost effectiveness of the ESnet project is outstanding. Network capacity has been consistently upgraded to provide a good service in the face of steadily increasing traffic and planned programmatic needs." More information on the review is available at the URL www.es.net. Because there are more than 135,000 users of ESnet, it is difficult to determine the actual numerical percentage of users that are satisfied or very satisfied. Open ESnet user meetings are held twice a year and users site representatives report that users are very satisfied with ESnet performance. In addition, network performance monitoring by various groups, both within ESnet and external to ESnet, report that ESnet is a premier network used worldwide by scientists and engineers and is very successful. ESnet continues to meet or exceed its goals and is on track with the services it provides to the DOE user community.

For the NERSC Center, the measure was determined by a 37-question user survey taken in the summer of

1998. The results of the survey are at the URL www.nersc.gov/whatsnew/survey/. The respondents to this survey numbered 38, about 6 percent of the actual 2,425 registered users, or about 13 percent of the 1,118 actual users. The average rating was 5.43 on a scale of 1 (very unsatisfied) to 7 (very satisfied). Taking a rating of 4 as 'satisfied' the users are statistically halfway between 'very satisfied' and 'satisfied.' One question on the survey asked for a relative rating of satisfaction with respect to other Centers; only 5 of the 38 responding users felt that one or more other centers were better.

The NERSC Center measure was again determined by a user survey—a much more comprehensive one—taken in the summer of 1999. The results of the survey are at the URL http://hpcf.nersc.gov/about/survey/99/intro1.html. The respondents to this survey numbered 117, about 13 percent of the 1,410 active users. (The goal was to obtain 20 percent.) The average rating was nearly 6.0 on a scale of 1 (very unsatisfied) to 7 (very satisfied). Ratings were obtained on nearly 100 elements of NERSC and ratings spanned the range between 6.6 (very satisfied) to 4.0 (satisfied); the average rating on each element increased by more that 0.7 over the 1998 survey. This year the question on the survey asking for a relative rating of satisfaction with respect to other computing centers; only 4 of the 55 responding users felt that some center had an element better than NERSC. Thirty-eight indicated that NERSC deserves its reputation of being one of the best computing centers in the world. This recent survey also asked the users for their recommendations on many of the information services and other elements of NERSC and plans are set to respond to these suggestions. The measurement has been successful and the NERSC progress outstanding. There will be a new survey after the new computing system is installed, accepted and fully commissioned and the users have gained some experience using it. **Assessment:** Exceeded Goal

ST 3-4. Improving Peer and Program Review Processes. Improve peer and program review processes. **Assessment:** Met Goal

Success will be measured by:

- *Receive from the National Research Council an assessment, of the quality of science in the Fusion Energy Sciences research programs.*

Results: The NAS has established a review committee to assess, among other things, the quality of the science produced by the Fusion Energy Sciences program. The members of the committee were selected and met several times during the fiscal year. An interim report with initial comments was submitted in August of the fiscal year. **Assessment:** Nearly Met Goal

Plan Of Action: The committee's interim report was of significant use to the Office of Fusion Energy Sciences in developing program plans and FY 2001 budgets. The final report to be issued in FY 2000 will contain a more comprehensive assessment and address long-term issues facing the field.

- *Maintain high scientific quality in the Energy Research Program as judged by the Program Advisory Committees.*

Results: During FY 1998, the Nuclear Science Advisory Committee held a major review, and issued a report on "Scientific Opportunities and Funding Priorities for the DOE Medium Energy Nuclear Physics Program." That report was issued September 1998. The FY 2000 Nuclear Physics budget submission to Congress is strongly influenced by the recommendations of that report. **Assessment:** Met Goal

ST 4-1. Developing and Promoting Technologies and Programs That Deliver Information and Contribute to Learning in Science, Math, Engineering, and Technology. Develop and promote technologies and programs that deliver information and contribute to learning in science, math, engineering and technology and, in general, expand access to DOE's technical information. Leverage DOE's human and physical research infrastructure, working with the National Science Foundation and other Federal agencies, to promote science awareness, enable advanced educational research opportunities, build capabilities at educational institutions, and improve educational opportunities for diverse groups. **Assessment:** Met Goal

Success will be measured by:

- *Attract outstanding U.S. students to pursue nuclear engineering degrees by: Increasing the number of fellowships from 14 to 22; Increasing the number of Nuclear Engineering Education Grants from 19 to over 40; Providing summer on-the-job training to 29 junior and senior nuclear engineering scholarship recipients.*

Results: Fellowships increased from 14 to 22. Total continuing and new NEER grants increased from 19 to 39; all 29 junior and senior scholarship recipients were offered internships. Attracting outstanding students to pursue nuclear engineering degrees will help maintain the nuclear engineering manpower infrastructure into the next century. NEER awards were significantly higher in dollar amount thus limiting awards to 39. **Assessment:** Met Goal

- *Support U.S. universities' nuclear energy research and education capabilities by: Providing fresh fuel to all university reactors requesting this service; Funding at least 20 universities with research reactors for reactor upgrades and improvements; Partnering with 19 or more private companies to fund DOE/Industry Matching Grants Program for universities; Increasing the funding for Reactor Sharing by 40 percent over FY 1998, enabling each of the 26 schools involved in the program to improve the use of their reactors for teaching, training, and education within the surrounding community.*

Results: All universities requiring fuel received it and continue to operate their reactors; 21 universities received funding to upgrade the performance of their reactors; partnered with over 20 private companies to fund the DOE/Industry Matching Grants program for

21 universities; and all 22 schools requesting reactor sharing funds received it with an average increase of 40 percent to those requesting increases. These programs provide continuing support for university nuclear engineering programs and university research reactors which play a major role in helping to maintain adequate U.S. nuclear engineering research and education infrastructure. **Assessment:** Met Goal

- *Initiate a Significant Opportunities Program in the broader sciences of global change for outstanding undergraduate and graduate students.*

Results: The Summer Undergraduate Research Experience (SURE) program was initiated in FY 1999 with 16 awards, and the Graduate Research Environmental Fellowships (GREF) program was initiated in FY 1999 with 10 awards. A two-week orientation course was held at the National Institute for Global Environmental Change (NIGEC) for all of the SURE and GREF students in June, and the students then spent the summer on assignment at various DOE laboratory facilities. At the end of the summer, a symposium was held where each of the students presented research results from their summer efforts. **Assessment:** Met Goal

- *Provide web-based access to energy-related scientific and technical information obtained by DOE via interagency, U.S. business and industry, and international agreements, exchanges, and partnerships.*

Results: In FY 1999, an initiative was undertaken to use the collective purchasing power of the DOE/contractor community to reduce individual site costs for journal subscriptions; and 22 sites were represented under this initiative as of September 30. Arrangements with publishers such as the American Association for the Advancement of Science (AAAS) have resulted in significant savings at various sites; and nine sites are participating in an Elsevier/Los Alamos National Laboratory agreement, which collectively has resulted in sites gaining access to the equivalent of millions of dollars in electronic technical journals while avoiding the market cost of subscribing individually. Facilitating access to information and information products of interest to the Department, targeted for FY 1999, was accomplished through the development and release of Version 1 of PubSCIENCE to the Department and the public. PubSCIENCE, containing 1,000 journal titles from 20 publishers of peer-reviewed scientific and technical journals from around the world, provides one-stop access to journal literature with the capability to search across journals with a single query at no cost to the user. Online on October 1 and officially unveiled by Secretary Richardson at a ribbon-cutting ceremony on October 12, PubSCIENCE far exceeded projections of a December 31 introduction with only 40 journal titles. In addition, 81,000 foreign research citations were acquired at no cost to the Department in FY 1999 through exchange agreements with multilateral international organizations and bilateral international exchanges. These citations were received in exchange for approximately 33,000 citations from U.S. sources. As a result of these accomplishments, complex-wide cost avoidance is achieved by leveraging purchasing power to gain electronic access to the information needed to conduct R&D activities, enabling a growing number of program managers and researchers to utilize an important new tool in increasing efficiency and keeping abreast of science news across the disciplines. Information available is not only increased, but ease of access to scientific journals is also facilitated through PubSCIENCE. Foreign information available via multinational exchange adds to the body of knowledge in energy-related scientific disciplines, and findings can be incorporated into research projects to maximize return on taxpayer investment. **Assessment:** Exceeded Goal

- *Continue to make 2 to 10 appointments each in the Biological and Environmental Research program's Alexander Hollander Distinguished Post Doctoral Fellowship; and the multi-agency SOARS Program (Significant Opportunities in Atmospheric Research and Science) for outstanding Hispanic, Native American, and African American students in the atmospheric and related sciences.*

Results: Ten new Hollaender Distinguished Post-Doctoral Fellowships have been awarded. Four SOARS protogees are being sponsored this year by DOE. These students are attending the summer SOARS program at the National Center for Atmospheric Research. **Assessment:** Exceeded Goal

CORPORATE MANAGEMENT

CM 1-1. Instituting a Sound ES&H Culture. Integrate and embed risk-based outcome oriented environment, safety, and health (ES&H) management practices into the performance of DOE's day-to-day work. Clearly identify and fund ES&H priorities and ensure resources are appropriately spent on those priorities. **Assessment:** Exceeded Goal

Success will be measured by:

- *Prevent fatalities, serious accidents, and environmental releases at Departmental sites.*

Results: DOE had no work-related fatalities during FY 1999. Further, trends of worker safety and health have been steadily improving for several years. Trends of environmental releases have been on a downward trend for 3 years. **Assessment:** Exceeded Goal

- *Implement Integrated Safety Management Systems in all major management and operations contracts.*

Results: The Integrated Safety Management System has been incorporated in all major management and operation contracts. **Assessment:** Met Goal

- *Provide expanded access to information on health-related risks from operating our facilities to ensure that minority and low-income populations, which may be disproportionately adversely impacted by DOE facilities, understand the Department's environmental justice goals and strategies.*

Results: In order to provide expanded access to information about the Department's environmental justice goals, the "Subsistence and Environmental Health Newsletter" was published in November 1998 and Summer 1999. It was distributed to 3000 targeted individuals, organizations, and communities across the country. The newsletter provides individuals and organizations with information about an array of issues affecting diverse population groups, with different lifestyles, in different geographic locations across the country—all of which can influence patterns of exposure to environmental contaminants. Additionally, the newsletter describes activities undertaken to address those issues, at both DOE and non-DOE sites.

Among the topics addressed in the newsletter are food safety, potential uptake of radionuclides in food crops grown near DOE sites, and community-partnership approaches to research. Each issue presents technically accurate and understandable information that also is meaningful to different groups across the country. Newsletters provide useful tips for minimizing or preventing exposure to contaminants in foodstuffs and sources of additional information. Although the newsletter is targeted primarily at affected individuals and community groups, it also has proven informative to the research community. The newsletter is a Departmental vehicle for risk communication that addresses issues of concern to communities across the country. **Assessment:** Met Goal

- *Conduct oversight special reviews, assessments, evaluations, and inspections of such topics as emergency management, safety management, accidents, and safeguards and security.*

Results: Completed the following activities:
Environment, Safety, and Health Evaluations:
— Integrated Safety Management Evaluation of the Y-12 Plant, December 1998
— Focused Safety Management Evaluation of the Nevada Test Site, March 1999
— Focused Safety Management Evaluation of the Rocky Flats Environmental Technology Site, March 1999
— Focused Review of the Yucca Mountain Project, April-May 1999
— Focused Safety Management Evaluation of the Nevada Test Site, April 1999
— Focused Safety Management Evaluation of the Brookhaven National Laboratory, June 1999
Special Reviews and Studies:
— Independent Technical Review of Argonne National Laboratory-West Radiation Contamination Incident, December 1998
— Limited Review of DOE Unclassified Computer Systems (December 1998)
— Independent Oversight Review of Department of Energy Unclassified Computer Systems, December 1998
— Interim Report of the Office of Oversight Review of the Effectiveness of DOE Occupational Medicine Programs, January 1999
— Independent Oversight Assessment of Radiation Protection Programs within the Department of Energy, May 1999
— Evaluation of the Nevada Test Site Emergency Management Exercise—Sunrise '99, June 1999
Follow-up Reviews:
— Independent Oversight Follow-up Review of Aviation Safety Programs in the Department of Energy, November 1998
— Independent Oversight Follow-up Review of the 1996 Integrated Safety Management Evaluation at the Pacific Northwest National Laboratory, November 1998
— Follow-up Review of the Construction Fatality at Brookhaven National Laboratory, June 1999
Safeguards and Security Inspections:
— Safeguards and Security Inspection of the Los Alamos National Laboratory, November 1998
— Review of DOE Unclassified Computer Systems, December 1998
— Site Profile of the Oak Ridge National Laboratory, January 1999
— Kansas City Follow-up Review, February 1999
— Savannah River Follow-up Review, March 1999
— Hanford Follow-up Review, April 1999
— Safeguards and Security Inspection of the Lawrence Livermore National Laboratory, April - May 1999
— Safeguards and Security Inspection of the Sandia National Laboratories, New Mexico June - July 1999
— Safeguards and Security Inspection of the Los Alamos National Laboratory, August 1999
Assessment: Met Goal

- *Prepare a draft Department of Energy implementation plan for the Administration's Clean Water Initiative.*

Results: In October 1998, the Department completed the preparation of a draft implementation plan for the Administration's Clean Water Initiative. **Assessment:** Met Goal

CM 1-3. Ensuring Employees Are Qualifies in Their ES&H Responsibilities. Ensure that all DOE employees are appropriately trained and technically competent commensurate with their ES&H responsibilities. **Assessment:** Met Goal

Success will be measured by:

- *Improve Federal technical workforce capabilities at defense sites by implementing the FY 1999 milestones of the Revised Implementation Plan for DNFSB Recommendation 93-3.*

Results: FY 1999 milestones for the revised 93-3 Implementation Plan have been met and accomplished 90 days ahead of schedule. All requested materials have been provided to the Defense Nuclear Facilities Safety Board to support the Board's action to close Recommendation 93-3. Closure is anticipated in the first quarter of FY 2000. **Assessment:** Met Goal

CM 1-4. Investigating Feasibility of Independent External Oversight of Safety and Health at DOE Sites. Work with the Nuclear Regulatory Commission and the Occupational Safety and Health Administration to evaluate the costs and benefits of independent external regulation of safety and health. **Assessment:** Met Goal

Success will be measured by:

- *Complete the ongoing pilot projects which assess DOE facilities against the standards that the NRC believes would be appropriate to ensure radiological safety.*

Results: Reports were prepared for each of the three Pilots that were conducted. Two of the reports were delivered to the Congress on March 31, 1999. The third report was finished and sent to Congress on July 2,1999. **Assessment:** Met Goal

CM 2-1. Involving Stakeholders in the Policy-making Process. Foster strong partnerships with neighboring DOE communities, regulators, and other stakeholders to determine priorities and solutions. **Assessment:** Met Goal

Success will be measured by:

- *Conduct stakeholder meetings to increase public involvement in crosscutting environmental quality issues. The meeting participants will include advisory board members, state and local governments, Native American Tribes, and other stakeholders across the country.*

Results: The Office of Intergovernmental and Public Accountability assists approximately 12 Site-Specific Advisory Boards across the DOE-Environmental Management (EM) complex in conducting monthly stakeholder meetings. These boards are comprised of representatives from state and local governments, Native American Tribes, and individuals with an interest in EM activities at a particular site.

As well, this Office sponsors cross-cutting meetings on issues such as Transportation and Environmental Justice. The Office of Intergovernmental and Public Accountability also works with specific groups such as the State and Tribal Government Working Group (STGWG). This year an estimated 150 stakeholder meetings have been conducted. **Assessment:** Met Goal

- *Conduct "Communicating with the Public" training sessions for DOE managers.*

Results: The Office of Intergovernmental and Public Accountability conducted training sessions in: October 13-16, 1998 (Federal Energy Technology Center), November 4-5, 1998 (Brookhaven), January 12-13, 1999 (Idaho), March 24-25 (Washington, DC), April 7-8 (Nevada), September 29-30 (Savannah River), November 9 and December 8 (Lawrence Berkeley) **Assessment:** Met Goal

- *Respond to an estimated total of 500,000 public requests for information and documents from the Center for Environmental Management Information within an average of two business days per request.*

Results: Responded to public requests received for information within an average of two business days per request. Requests are obtained electronically, via telephone, walk-in and through the web site. **Assessment:** Met Goal

CM 2-2. Improving Communications with Customers and the Public. Increase customer and public awareness of DOE's mission areas by improving the quality, timeliness, frequency, and sufficiency of information disseminated on the Department's functions, successes, lessons learned, and future activities. **Assessment:** Met Goal

Success will be measured by:

- *Reduce the Freedom of Information Act backlog by 10 percent and the average case age by 10 percent over the previous year.*

Results: We reduced the Freedom of Information Act backlog to 304 cases, which met the 10 percent reduction goal. We nearly met the goal (achieved 84 percent of the goal) of reducing the average FOIA case age by 10 percent. This part of the overall goal was not met due to the 49 cases that required coordination with other Federal agencies and involved classified information. We did not have control over the processing time with these agencies which slowed down our overall time. **Assessment:** Nearly Met Goal

Plan Of Action: We will continue to streamline the FOIA process and reduce both the backlog and average case age.

- *Improve the quality and volume of information on the DOE's World Wide Web site and demonstrate*

user-interest through a higher number of home page visits (hits) per year.

Results: The DOE home page continues its proven record of increased service to a networked public accessing information electronically. The page, which is a portal to other home pages, is visited more than 250,000 times each fiscal quarter. The volume of public information generated by Departmental elements is such that a search engine is provided as a prominent feature of the page. More than one in four visitors use this feature to locate and access information. Additionally, design enhancements to the page are underway to improve content presentation, ease of use, accessibility and improved navigation. This effort is being undertaken now in anticipation of continued growth trends and a recognition of public reliance on the home page as an information resource. **Assessment:** Met Goal

CM 2-3. Increasing Openness with the Public. Increase openness with the public by prudently declassifying information about the Department's activities while maintaining a balance with the Nation's security. **Assessment:** Met Goal

Success will be measured by:

- *Implement 10 CFR Part 1045 through reviewing 100 percent of other agency classification guides submitted, and by conducting five on-site reviews of other-agency Restricted Data programs.*

Results: The Department successfully completed reviews of 100 percent of the classification guides submitted by other agencies under 10 CFR Part 1045. There were a total of five such guides submitted. The other-agency guides are reviewed to determine their consistency with the Department's Restricted Data and Formerly Restricted Data classification topics, thus enhancing the protection of such critical information throughout government. With regard to the other-agency onsite visits, the Department was required under Public Law (P.L.) 105-261, section 3161, to shift its focus from appraising other-agencies' classification programs to appraising their declassification programs. The law requires the Department to minimize the risk that sensitive nuclear weapon information will be inadvertently released during the other-agency E.O. 12958 declassification process. Therefore, in lieu of conducting on-site reviews under the regulation this fiscal year which focus primarily on classification programs, the Department conducted on-site reviews under the aforementioned statute focusing on other-agency declassification programs. 10 CFR Part 1045 onsite visits will resume in FY 2000. The on-site review effort is only one component of the Department's responsibilities under P.L. 105-261. Under this statute the Department also developed and initiated a training program for other-agency reviewers. This training program, under which over 900 reviewers were trained, required that significant resources be diverted from the on-site review program. Therefore, the Department did not have sufficient resources to conduct five on-site reviews as projected at the beginning of the year. The Department conducted three such reviews.

Assessment: Nearly Met Goal

Plan Of Action: The other-agency training program, which extends into FY 2000 and beyond, will continue to draw resources from the on-site review program. In addition, the Department will conduct extensive training for its own newly hired reviewers supporting P.L. 105-261 other-agency declassification audit program (recently expanded by P.L. 1056-65, section 3149) in FY 2000. Resources at hand will allow the Department to conduct a total of three onsite reviews under the statute and/or the regulation in FY 2000.

- *Continue reviewing DOE documents for possible declassification and release of those that no longer need to be withheld for security purposes.*

Results: The Department reviewed over 5 million pages for possible declassification. Of those reviewed, over 2 million pages of documents were declassified or confirmed to be unclassified. The remainder of the pages contained information which would harm the Nation's security and were, therefore, not released to the public. **Assessment:** Met Goal

- *Implement the fundamental Classification Policy Review recommendations and issue 40 classification guides in the streamlined format containing the updated guidance.*

Results: The Department completed 19 guide revisions plus 6 new guide issuances during the past fiscal year. In total, over the past two years, over 50 guide revisions and 15 new guide issuances have been accomplished. All guide revisions for the Fundamental Classification Policy Review (FCPR) have been prepared; over 80 percent have been approved by the Department of Energy for issuance. The remaining 20 percent require approval by the Department of Defense (DOD) before they can be issued. Therefore, the Department is currently awaiting DOD approval before final guide implementation is possible. **Assessment:** Nearly Met Goal

Plan Of Action: The Department will implement all remaining FCPR guide changes within 6 months of final approval. Already in FY2000, seven guide revisions and two new guide issuances have been accomplished.

CM 2-4. Developing a Public Health Agenda for DOE Sites. Work with the Department of Health and Human Services (HHS) to prepare a consolidated and coherent strategy for worker and public health effects studies and activities. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Issue an initial status report on the development of a public health agenda by December 31, 1998, and a final public health agenda for each site, which reflects customer and stakeholder input, shall be issued by September 30, 1999.*

Results: Initial status report was delivered. Draft public health agenda was issued April 15, 1999, and public comments were received by July 30,1999. However, public comments have taken longer than anticipated to resolve; therefore, the report was not issued

on September 30, 1999. We expect the report to be completed in FY 2000. **Assessment:** Nearly Met Goal

CM 3-1. Improving Managerial Performance and Accountability. Improve decision-making, ensure accountability, maximize Departmental resources, and achieve intended results by corporately managing the Department's mission, functions, and activities. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Identify functional and technical system requirements for developing a Business Management Information System (BMIS) with a special emphasis on financial management, and develop business scenarios for its evaluation (a milestone of a FMFIA corrective action plan).*

Results: Five requirements teams with members from across the Department have drafted functional and technical requirements for a new financial management system. A business case has also been completed which supports the acquisition of a modern, integrated, commercial off-the-shelf financial management system. The system requirements will be finalized early in FY 2000 due to efforts to minimize the impact of year-end and new fiscal year workload of the finance and budget community and will not impact major milestones for the project. **Assessment:** Nearly Met Goal

- *Develop annual performance-based budgets by using DOE's corporate Strategic Management System to link resource requirements to five-year plans, make independent project validations, and perform cross-cutting program evaluations.*

Results: This performance goal establishes the need to continue the implementation of the Government Performance and Results Act at the Department of Energy. Three years ago, DOE instituted an agency-wide Strategic Management System (SMS) that is fundamentally based on the principles of GPRA and continues to be the vehicle for the Department to integrate the GPRA requirements into our day-to-day management and decisionmaking activities. The SMS integrates the interrelated strategic planning, budget, and performance evaluation processes throughout the Department. Although we have made improvements on several fronts, a lot of work still remains. Congress, GAO and the IG have provided valuable feedback on our approach. We have begun work on the second strategic plan in conformance with the Office of Management and Budget recommendation that agencies develop strategic plans this year. Our guidance for the new strategic plan addresses many of the weaknesses, especially in providing improved linkages with program areas. We expect to produce this plan on time. We have made many improvements to other GPRA products including the Annual Performance Plan.

The Department and its programs perform many project validations and program evaluations. These evaluations are generally used for day-to-day management. Although we believe there is a need to perform planned systematic cross-cutting program evaluations, we have not instituted program evaluations due to limited resources.

This deficiency will not have a material impact on the Department's performance because of the presence of substantial evaluation by other parties; however, the goal of systematic program evaluation would benefit performance based management at the Department as a result of its cross-cutting view of performance. **Assessment:** Nearly Met Goal

Plan Of Action: Assess current Departmental efforts at program evaluation, document the findings, and plan a systematic approach to further evaluations by August 2000.

- *Conduct self assessments to measure organizational performance in the areas of Customer Satisfaction, Employee Satisfaction, and the achievement of Business Results using the Malcolm Baldrige, President's, or Energy Quality Award Criteria.*

Results: Of 28 Federal Departmental Elements, 22 performed a self-assessment using the Malcolm Baldrige Criteria for Performance Excellence. The scores ranged from a low of 198 to a high of 727 on a scale from 0 to 1000. World-class Baldrige winners typically score in the high 600 range. The median score was 432. In addition, 7 organizations (2 Federal, 5 Contractors) applied for the Energy Performance Excellence Award Program. Median score for the applicants was 445. The median score for Customer Satisfaction was 45 out of 125. The median score for Employee Satisfaction was 21 out of 50, and the median score for business results was 44 out of 125. These scores will be used as the baseline score from which improvement will be measured. These scores are representative of organizations which are in the early stages of developing sound systematical approaches to their management systems. **Assessment:** Met Goal

CM 3-2. Continuing Initiatives to Streamline and Re-engineer the Department. Continue to streamline and improve operations, further reduce overhead expenditures, and facilitate additional workforce reductions while aiding affected employees and communities. **Assessment:** Met Goal

Success will be measured by:

- *Realize annual savings from improved operations to achieve cumulative savings totaling $1.7 billion by the end of FY 2000: Achieve staffing reductions to achieve Departmental target of 10,613 by the end of FY 1999; Achieve $65 million in further cost avoidances in information technology; and Reduce support service contracting obligations below $610 million in FY 1999.*

Results: We have realized over $1.45 billion in cumulative savings to date. Staffing has been reduced to 10,275 as of September 25, 1999, which already exceeds the FY 2000 goal. Although we only saved approximately $60 million in information technology in FY 1999 vs. the $65 million goal, we have already exceeded the overall FY 2000 goal of $245 million ($285 million in savings through September 1999). Support service contracting obligations were $428

million in FY 1999, which was $182 million below the $610 million goal. **Assessment:** Met Goal

CM 3-3. Improving Human Resource Practices. Implement quality management principles, value diversity, and continue to improve human resources systems and practices. **Assessment:** Met Goal

Success will be measured by:

- *Improve workforce skills and reduce training costs by implementing the FY 1999 milestones in the DOE Corporate Education, Training, and Development Plan.*

Results: The Corporate Education, Training and Development Business Plan (Business Plan) was forwarded to the Deputy Secretary and was approved in August 1999. The Business Plan has been desktop-published and it is expected that the formal, published version will be distributed during November 1999.

All the FY 1999 milestones in the Business Plan have been met and following are some actions which assisted in improving Department-wide workforce skills and reducing overall Departmental training costs: (1) Secretarial Policy on Effective Management of Training Resources issued March 4, 1999, and DOE Order 360.1 ("Training") issued on September 21, 1999; (2) Draft DOE Policy Documents were completed by September 30, 1999, to address Training Centers of Excellence and Contractor Training Performance Objectives and Measures; (3) Final Report on Recommendation 93-3 was submitted to the Defense Nuclear Facilities Safety Board, and the development of the FY 2000 Federal Technical Capability Program Plan and the Federal Technical Capability Program Manual were completed by September 30, 1999; and (4) Guidance Documents were completed by September 30, 1999, to address developing Individual Development Plans, conducting Training Needs Assessments, developing organization Training Plans, and addressing Fellowships and Career Development.

In addition, the following FY 1999 elements of the Business Plan have been completed and have assisted in the reduction of duplicate training course development and Department-wide training cost savings: (1) Cross-cutting Training Forum was established and put into operation by September 30, 1999, to reduce development of duplicate training courses at an estimated savings of $200K; (2) Regional Training Councils and partnerships have been developed that have achieved a Government-wide training cost savings of $180,000 and an M&O contractor cost avoidance of $32,000 in FY 1999; (3) the Corporate Human Resource Information System Training Administration Module was developed and piloted by September 30, 1999; (4) the Technology-Supported Learning Plan was developed by September 30, 1999; and (5) the Draft Supervisory and Managerial Training Framework Document was completed by September 30, 1999, as well as the establishment of Federal and contractor training forums focused on training management improvement, efficiencies, and training cost savings (e.g., the Training and Resource Data Exchange Workshop, the DOE Federal Trainer's Special Interest Group, and the Department-wide Human Resources Development Forum). **Assessment:** Met Goal

- *Expand the use of Alternate Dispute Resolution by 20 percent over the FY 1998 use to mediate workplace disputes such as Equal Employment Opportunity complaints and grievances. (GC)*

Results: The Office of Dispute Resolution has worked with other relevant offices to develop a comprehensive referral package to encourage mediations and to expedite administration of mediations. As part of this package, all complainants with pending EEO cases receive a letter explaining the mediation option. The Director, Office of Dispute Resolution, has participated in several conferences of senior management to publicize the mediation program. There has been an increase in the number of offices that have participated in mediations; the acceptance rate (i.e., the number of managers who have agreed to participate when a complainant requested mediation) has increased and the program has received excellent "word of mouth" recommendations. It should be noted that there has been a systemwide increase in total EEO cases mediated—from 28 in FY 1998 to 77 in FY 1999. The Department has committed $50,000 for the Office of Dispute Resolution to use to hire mediators from outside the agency. This should help prevent any concerns that employees may have about a lack of impartiality, thus encouraging more participation in mediation. **Assessment:** Nearly Met Goal

Plan Of Action: We will continue our efforts to work with organizations to use the Alternate Dispute Resolution process to mediate workplace disputes.

- *Implement a DOE-wide employee accessible automated personnel system by December 1998.*

Results: In December 1998, the Director of Management and Administration and the CFO announced the implementation of the DOE Employee Self Service (ESS) system for DOE employees. With ESS, employees are able to view their own human resource information and their earnings, leave and benefits statement from their desktops by using the internet. Employees are able to view the results of personnel actions processed, such as awards, promotions, and within-grades, in the ESS system the day after the action is entered into the automated personnel system. Further enhancements were made to allow employees to update their education, emergency contacts, licenses and certifications, and home address. **Assessment:** Exceeded Goal

- *Continue hiring welfare to work recipients to achieve the Presidential goal of 55 by FY 2000, 40 of whom will be hired by the end of FY 1999.*

Results: The Department has already hired 78 former welfare recipients as of September 30, 1999, which exceeds the FY 2000 goal of 55.

Assessment: Exceeded Goal

CM 3-4. Demonstrating the Department's Commitment to Diversity by Becoming a Recognized Leader in the Federal Government. Create a model organization that fosters and embraces diversity by addressing under representation of minorities and women, and by committing to equity, inclusion, opportunity, accommodation, and non-discrimination in the workplace. **Assessment:** Nearly Met Goal

Success will be measured by:

- *Publish in the Code of Federal Regulations the DOE Mentor-Protégée Program.*

Results: The performance goal was nearly met; however, the proposed rule had numerous legal and departmental reviews, opinions, and rewrites which delayed the concurrence process. All Departmental concurrences have been obtained and the proposed rule is now pending signature by the Secretary before transmittal to the *Federal Register* for publication. We anticipate publication in the *Federal Register* in the next 60 days. **Assessment:** Nearly Met Goal

- *Commit to specific procurement strategies that will increase the participation of women-owned small businesses in the Federal marketplace through a Memorandum of Understanding with the Small Business Administration.*

Results: The Memorandum of Understanding outlining strategies for increasing the participation of woman-owned small businesses in DOE procurement opportunities was signed by the SBA Administrator on May 14, 1999, and Secretary Richardson on May 25, 1999. By executing this Memorandum of Understanding, both the Department and SBA agree to work together in performing their respective obligations under the Memorandum of Understanding. **Assessment:** Met Goal

- *Enhance America's science workforce by ensuring that minority-serving institutions are afforded and take advantage of the Federal research, development, education and equipment opportunities for which they are eligible and increasing their awards by 5 percent over FY 1998.*

Results: Information available to date indicate that the goal was below expectation. The Department did not achieve the anticipated increase over 1998 results due to reduced programmatic budgets, which resulted in fewer partnerships with minority educational institutions. **Assessment:** Below Expectation

Plan Of Action: In an effort to increase funding levels and increase the number of sustainable partnerships with minority educational institutions, Secretary Richardson has committed to establishing a Departmental Minority Educational Institutions Policy. This policy will serve as a framework for advancing research and development partnerships with minority educational institutions and setting aggressive goals for contract, subcontract, and assistance awards to these institutions.

CM 4-1. Using Prudent Contracting and Business Management Practices. Use prudent contracting and business management approaches that emphasize results, accountability, and competition; improve timeliness; minimize costs; and ensure customer satisfaction. **Assessment:** Exceeded Goal

Success will be measured by:

- *Conduct a follow-up assessment of the effectiveness of actions taken in response to the recommendations made in the Performance Based Incentive Report, as committed to in the FMFIA FY 1997 report.*

Results: An assessment was completed on March 31, 1999, and a determination made that the actions taken in response to the recommendations in the Performance Based Incentive Report were effective. **Assessment:** Met Goal

- *Issue a new contractor fee policy by December 1998, as committed to in the FMFIA FY 1997 report.*

Results: A new DOE contractor fee policy was developed and published in the *Federal Register* in March 1999. **Assessment:** Met Goal

- *Award 50 percent of all support service contracts in FY 1999 as performance-based service contracts.*

Results: 75 percent of DOE support service contracts were awarded as performance-based contracts during FY 1999. **Assessment:** Exceeded Goal

- *Award 50 percent of all management and operating (M&O) contracts, including three M&O contracts that will change to Federal Acquisition Regulation (FAR) contracts during FY 1999, using competitive procedures.*

Results: DOE awarded 60 percent of all Management and Operating contracts as competitive contracts during FY 1999 including the three M&O contracts. **Assessment:** Exceeded Goal

- *Convert all management and operating contracts awarded in FY 1999 to performance-based contracts.*

Results: All DOE Management and Operating contracts awarded in FY 1999 were performance-based type contracts. **Assessment:** Met Goal

- *Prepare and publish an annual accountability report that includes the Department-wide audited financial statement with an unqualified opinion to the Office of Management and Budget by March 1999.*

Results: Produced the FY 1998 Accountability Report (AR) and delivered it to OMB on March 1, 1999. While we produced an on-time, fully integrated, and high quality AR one full year ahead of schedule, the IG qualified their audit opinion on the financial statement due to issues surrounding the estimate of DOE's future environmental liabilities. Although DOE received a qualified audit opinion, Congress did award DOE's Accountability Report with the highest grade among other government agencies also receiving a qualification. During FY 1999 the CFO has worked closely with EM to correct deficiencies with the environmental liability estimate material weakness, and results of an IG "interim status" review indicated an improved control structure. **Assessment:** Nearly Met Goal

CM 4-2. Applying Business-Like Practices to Management of DOE Projects and Assets. Strengthen the management of projects, materials, facilities, land, infrastructure, and other assets, to ensure safe, sound, and cost- effective operations, appropriate maintenance of sites, and to ensure intended project results. **Assessment:** Below Expectation

Success will be measured by:

- *Develop a plan by March 1999 to review DOE and contractor litigation cases in state and federal courts for appropriateness of early resolution through mediation. Increase by 20 percent over FY 1998 the number of such cases mediated. Demonstrate estimated savings of 50 percent in litigation costs for those cases settled in mediation as compared to the costs had those cases gone through litigation.*

Results: The Department and its contractors have emphasized the use of mediation at as early a stage as possible, in order to achieve time and cost savings and to achieve better and more durable settlements.

Each legal office in the field now has an alternative dispute resolution (ADR) liaison who works closely with the Director of the Office of Dispute Resolution to suggest and prepare cases for mediation. The ADR liaisons receive ongoing training in support of this collateral duty: they participated in a 3-day mediation training course; they attended a professional conference; they have monthly conference calls to discuss legislative and policy issues as well as case selection and strategy. The Department's Litigation Tracking System is being redesigned to provide for better recording of ADR in contractor litigation.

While complete data has been difficult to collect, we have seen significant numbers of mediation, throughout the Department and with its contractors. In addition to significant cost savings, there have been savings in management time as well as the ability to reach better settlements, which enabled parties to maintain working relationships, rather than end as adversaries. Some examples are seven cases mediated by Lockheed Martin at Oak Ridge, of which four were settled at mediation, resulting in a savings of approximately $850,000 in attorney fees; a contract case mediated at Sandia with a savings of $150,000; a construction case mediated at the Idaho site with savings of approximately $1 million in outside counsel fees, plus $500,000 in internal costs; nine cases mediated at Lawrence Livermore and at Argonne; six cases mediated, one of which, a construction case, saved $50,000 to $100,000 in legal fees. The five EEO cases settled in mediation saved a total of approximately $384,000, and an intellectual property case which was settled saved approximately $300,000 to $500,000 in legal fees.

In most cases, the cost for mediation will not exceed $10,000. Therefore, although we were unable to measure cases mediated and cost savings in the anticipated format, it is clear that the goal was met.
Assessment: Met Goal

- *Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of project management.*

Results: Five of seven milestones have been completed, one is on-going, and if successful, on-site reviews will close out the seventh area in September, 1999. After this mid-year progress was reported, the Office of Field Integration was disbanded as a result of Congressional Appropriations. Responsibility for project management has been transferred to the Office of CFO. **Assessment:** Below Expectation

Plan Of Action: The Office of CFO is reevaluating the Department's policies and practices related to managing its projects which have the potential of generating entirely new corrective action plans. There are new goals in the FY 2000 Performance Agreement which commit this office to improve project management. There will also be a new FMFIA issue in FY 2000 to address this ongoing problem.

- *Complete four Energy Systems Acquisitions Advisory Board (ESAAB) critical actions on required strategic and major systems.*

Results: There have been four Energy Systems Acquisitions Advisory Board actions at the Assistant Secretary level for various critical decisions on projects ranging from $122 million to $293 million.

Assessment: Met Goal

- *Verify progress against established project scope, schedule, and cost baselines on projects valued at $5 million or more.*

Results: The Department's field offices are verifying project scope, schedule, and cost baselines. Currently, operations offices are reporting they are attaining their annual project scope, schedule, and cost goals overall on an average of 90.5 percent. However, some offices are reporting that schedule baselines are being met an average of 50 percent or less due to delays caused by late vendor process equipment deliveries, and design specifications changes during detailed design.

Results from 33 independent external project reviews, undertaken this past year, indicate serious systemic issues needing correction. Among the most prevalent problems are inadequacies in technical scope, schedule planning and control, cost estimating, and lack of clarity on roles and responsibilities. Actions are underway to correct deficiencies in these projects.
Assessment: Below Expectation

Plan Of Action: Corrective action plans are under development or initiated for the 33 projects reviewed. We have established a strong corporate project management capability in the Office of CFO responsible for driving change in the Department's project management system, for providing a corporate oversight role, and for supporting the Department's project managers.

CM 5-1. Ensuring the Department's Information Systems Are Based on Cost-Effective Technology Solutions. Utilize, under the auspices of the Chief Information Officer (CIO), an integrated Department-wide framework for planning, budgeting, evaluating, and implementing information management requirements to reduce costs and improve operations. **Assessment:** Met Goal

Success will be measured by:

- *Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of unclassified computer security.*

Results: The CIO has reorganized the Office of the CIO to put more emphasis on Cyber Security, partnered with the Office of Counter Intelligence and the FBI's National Infrastructure Protection Center (NIPC) on cyber incident matters, and partnered with other agencies through the Federal CIO's Security Committee on a wide variety of cyber security issues. The CIO has also established an unclassified cyber security working group to develop strategy and policy and is presently formulating a strategy to reconfigure DOE's networks to provide improved protection. Action is underway to form a DOE-wide technical advisory board and a Cyber Security Policy Advisory Board. A draft computer security improvement program plan has been developed that is agile, uses a layered approach, establishes enclaves and clusters of commonality and balances protection with intrusion detection, assessment and warning. Additionally, this plan emphasizes training and awareness, prioritizes sites for enhancements and defines funding requirements. The CIO also initiated action that facilitated the combining of the classified and unclassified cyber programs under the CIO. **Assessment:** Met Goal

- *Continue to improve infrastructure to allow staff the capability of accessing and sharing information easily and seamlessly across the DOE complex.*

Results: The Department's Headquarters network infrastructure has been improved during FY 1999 to operate in a fault tolerant mode through implementation of redundant and enhanced communication links and enhanced technology protocols. Additionally, the Headquarters electronic mail infrastructure was improved through: (1) adoption of a common architecture, (2) development of an automated and synchronized mail directory process, and (3) strengthened and secured against denial of service attacks and virus contaminations spread through infected file attachments. These measures have increased the availability and effectiveness of this infrastructure to sustain continuous information delivery. Finally, Department-wide consensus was reached on the design, implementation and operation of a more protective and robust Corporate (business) network with scheduled implementation beginning the fourth quarter of fiscal year 1999 with planned completion by the second quarter of fiscal year 2000. **Assessment:** Met Goal

- *Continuously evolve the Department-wide information architecture with supporting standards to foster $100 million in cost avoidances by FY 2003.*

Results: The results are significantly better than performance goals. The Departmental Information Architecture and Standards has begun to positively impact cost savings and avoidances involving systems and infrastructure. Specific examples of technology implementations that have identified specific cost savings are CHRIS, BMIS-FM and Travel Manager to name but a few. These cost savings are attributed to work process improvements which cut time from processes and free staff to do other work and to more efficient and cost effective technology accross the complex. Other savings result from the elimination of satellite or duplicative systems and data stores associated with them, thus saving both operation and maintenance costs, and staffing support. Additionally any cost savings under the Telecommunications Integration System (TELIS) Contract can be attributed to information architecture as the primary vehicle guiding systems development and acquisition. It was made a compliance requirement for all TELIS services and support purchased under it. Implementations of consolidated data warehouses and common technologies (Email and Internet) also have produced cost savings and/or avoidances. Based on estimates of known technology implementations and systems implementations, aligned with the information architecture, it is estimated that the Department-wide Information Architecture has fostered, to date, approximately 50 percent of the target goal. The ongoing Departmental Information Architecture Project, to be completed in January 2000, will sponsor additional corporate systems solutions, resulting in additional targeted cost savings from restructured corporate business processes. We are on track to meet the overall goal of $100 million in cost savings by FY 2003.
Assessment: Exceeded Goal

- *Implement all FY 1999 milestones for year 2000 changes for mission-essential systems.*

Results: The Department is reporting that 420 of its 420 mission-critical systems are Year 2000 compliant. This is 100 percent compliance of the Department's mission-critical systems. In addition, 100 percent of the 545 health and safety-related systems in the Department's highest hazard facilities are Year 2000 compliant. In addition: 100 percent of the Department's non mission-critical systems are compliant; 100 percent of contingency plans are complete; 100 percent of independent validation and verification (IV&V) efforts for mission-critical systems are complete; and 100 percent of business continuity and zero day plans are complete. On November 22, 1999, the House Subcommittee on Government Management, Information, and Technology submitted their final Y2K Report Card. The Department of Energy received a grade of "A" for it's Y2K activities. This is a vast improvement over the grade of "F" that the Department received a year ago. The Department's efforts are also focused on managing changes to the Department's systems to ensure that all systems that have been re-mediated, reviewed, and tested and remain Year 2000 compliant should changes be required to these systems. All 42 business continuity and zero day plans are complete

and DOE will continue to fine-tune these plans to reflect final staffing decisions as well as the results of Year 2000 preparation drills within the Department and with the President's Information Coordination Center. The Department's Emergency Operations Center (EOC) in the Forrestal Building will operate as the Year 2000 Command Center for the collection, compilation, analysis and reporting of Departmental site and energy sector Year 2000 status information to the President's Information Coordination Center. **Assessment:** Met Goal

- *Develop the Corporate Management Information Program (CMIP) milestone plan and report to Congress.*

Results: Developed a comprehensive milestone plan that detailed the DOE Corporate Systems and infrastructure required to support them. The report provided detailed information over the five-year planning period on the systems to be developed or acquired, project milestones, cost schedules, performance measures, progress to date, and issues or concerns. It also included information on actions the CIO has taken to improve the CMIP management system, including CIO Quarterly reviews of the projects and the CMIP Semiannual Review Boards (consisting of the Director, Management and Administration, the CFO, and the CIO) which look at the overall program for potential changes in direction. The "U.S. Department of Energy's Corporate Management Information Program" semiannual status report was forwarded to Congress on October 28, 1999. This report updated the last report sent April 29, 1999. The commitment is now completed. **Assessment:** Exceeded Goal

CM 6-1. Promoting the Effective, Efficient, and Economical Operation of the Business Lines Through Audits, Investigations, Inspections, and Other Reviews. Promote the effective, efficient, and economical operation of the business lines through audits, investigations, inspections, and other reviews. **Assessment:** Met Goal

Success will be measured by:

- *Plan and, on a timely basis, conduct reviews based on assessment of risk and/or benefit to key Department programs.*

Results: For FY 1999, the Department met the goal of planning and conducting reviews based on assessment of risk and/or benefit to key Department programs. The OIG considers at least 23 Department locations—including all major contractor sites—to be high risk considering such factors as budget size, pending new projects, and problems with project management previously identified in audits and inspections. The high-risk locations account for $13 billion in annual obligations. For example, the OIG committed resources to issues associated with the Department's export licensing process for dual-use and munitions commodities, and the Department's tritium source selection, key programs of interest to the Secretary and Congress. **Assessment:** Met Goal

- *Focus investigations on allegations of serious violations of Federal law by: Obtaining judicial and/or administrative action on 30 percent of all cases in open status during the fiscal year; and Obtaining acceptance of 75 percent of the cases presented for prosecution.*

Results: For FY 1999, the OIG obtained judicial and/or administrative action on 28 percent of all cases in open status. The OIG obtained 74 percent acceptance rate on criminal and civil cases formally presented for prosecutorial consideration. **Assessment:** Met Goal

- *Complete at least 60 percent of the audits planned for the year and replace those audits not started with more significant audits which identify time-sensitive issues needing review.*

Results: The OIG completed 66 percent of audits planned for FY 1999 and replaced those audits not started with more significant audits that identify time-sensitive issues needing review. **Assessment:** Met Goal

- *Render, by designated due dates, an opinion annually on the Department's consolidated financial statements, system of internal controls, and compliance with laws and regulations.*

Results: The OIG completed required financial statement audits by the designated due dates in the law. **Assessment:** Met Goal

Mapping of Legal Requirements

Reference Index